DOCUMENT RESUME

ED 149 576 EC 104 170

AUTHOR	Ross, E. C.; And Others
TITLE	Human Rehabilitation Techniques. Contract Papers. Volume III, Part B.
INSTITUTION	Texas Tech Univ., Lubbock.
SPONS AGENCY	National Science Foundation, Washington, D.C. Office of Exploratory Research and Problem Assessment.
PUB DATE	77
GRANT	ERP-75-10594; ERP-75-10594-A01
NOTE	231p.; A Technology Assessment; For related information, see EC 104 163-174
EDRS PRICE	MF-$0.83 HC-$12.71 Plus Postage.
DESCRIPTORS	Architectural Barriers; Community Programs; Conceptual Schemes; Financial Support; *Handicapped; *Housing; Literature Reviews; *Models; Older Adults; Policy; *Program Costs; *Rehabilitation; Technology; *Transportation
IDENTIFIERS	Group Homes (Handicapped)

ABSTRACT

Volume III, Section B of a six-volume final report (which covers the findings of a research project on policy and technology related to rehabilitation of disabled individuals) presents four papers which examine important rehabilitation-oriented issues. In the first paper, "Transportation Problems of Persons with Disabilities--The Federal Response" by E. Ross, issues such as the scope and nature of transportation problems, existing federal financial resources and requirements, and Department of Transportation supported research are considered. K. Mallik, in a paper titled "Transportation Model--Benefit-Cost for Elderly and Handicapped Persons," reviews problems specific to the handicapped and aged, types of available transportation models, costs of operation, and benefits derived from the transportation system. "The Department of Housing and Urban Development--Influence and Impact on Supporting Alternative Community Based Living Arrangements for Persons with Disabilities" is the focus of a paper by E. Ross. A final paper by C. Spanhel and C. Sigelman examines "Housing and Residential Programing for the Handicapped" in terms of numbers of handicapped persons in need of housing and residential programing, major dimensions of the problems (including architectural barriers) and their solutions, specific models (including halfway houses) and their statuses, and costs of specific models. (SBH)

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HUMAN REHABILITATION TECHNIQUES

A Technology Assessment

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TEXAS TECH UNIVERSITY

Volume III
Part B

Supplemental Report:
Contract Papers

EC104170

FOREWORD

This document is the third volume of the final report *Technology Assessment: Human Rehabilitation Techniques*, a project conducted at Texas Tech University by the Department of Industrial Engineering, the Research and Training Center in Mental Retardation, the Department of Systems, and the Technical and Professional Writing Program. The research has been conducted with the support of National Science Foundation grants ERP 75-10594 and ERP 75-10594 A01, monitored by the Directorate for Research Applications, Division of Exploratory Research and Systems Analysis.

Richard A. Dudek, Horn Professor and Chairman of the Department of Industrial Engineering has been a co-principal investigator and director of the project. Gerard J. Bensberg, Director of the Research and Training Center in Mental Retardation, and M. M. Ayoub, Professor of Industrial Engineering, have been co-principal investigators. Carol M. Sigelman and Andrew S. Martin of the Research and Training Center in Mental Retardation and Robert F. Powers of the Department of Industrial Engineering have been program managers for the project. James R. Burns and William M. Marcy of the Department of Systems have been in charge of the modeling used in the project. Technical writing has been performed by Charles W. Brewer and Cynthia E. Lyle of the Technical and Professional Writing Program. In addition, several research assistants and support personnel, as listed in the individual volumes of the study, have contributed to the project.

The project team wishes to acknowledge the efforts of individuals who have served on the Oversight Committee, Elizabeth Boggs, Kan Chen, Beatrix Cobb, Ronald Conley, Richard Herman, John Noble, Jr., Evan Vlachos, and Lester Wolcott; of Lee Phillips who served effectively as a program manager for a short time before leaving Texas Tech; of Brian Lambert who served as Work Session Conference Coordinator; of those who participated in the work-sessions chaired by Ted Hartman, David Malone, Blair Rowley, Evan Vlachos and John Wittman; and of Anne Seitz, the Secretary of the Project.

Although the National Science Foundation has supported this project, the findings, conclusions and recommendations expressed are those of the research team and do not necessarily reflect the views of NSF.

PREFACE

During the various stages of data-gathering and analysis underlying Technology Assessment: Human Rehabilitation Technologies, project-team members and work-session conference participants required much information which was not available in useful form in published literature. In order to be of use, this information was required to be not only of a specialized nature but also to be compiled and integrated by persons expert in various fields. Persons whose expertise and fields of specialties permitted them to compile the information were identified by members of the project team, and they were contracted with for the writing of topical papers examining important rehabilitation-oriented issues. The papers in this volume supplemental to the final report are a result of these contracts.

VOLUME B

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TRANSPORTATION PROBLEMS OF PERSONS WITH DISABILITIES: THE FEDERAL RESPONSE

TRANSPORTATION PROBLEMS OF PERSONS WITH DISABILITIES: THE FEDERAL RESPONSE

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INTRODUCTION

The objective of this paper is to briefly outline the scope and nature of transportation problems encountered by persons with disabilities and to examine in some depth the federal government's response to meeting these identified problems.

Most Federal Government activity is centered in the Urban Mass Transportation Administration of the Department of Transportation. Attention and focus to date have emphasized transportation problems experienced by persons with physical disabilities. The transportation needs of persons with mental, emotional, and psychological disabilities have received very little attention by the Department of Transportation. However, the President's Committee on Mental Retardation has, from time to time, examined the subject of transportation and mental retardation. Almost totally neglected by all federal agencies are the transportation problems of persons with multiple and severe disabilities.

It should be emphasized that the Department of Transportation is currently conducting a $1.4 million research program on transportation problems of disabled persons. It is the hope of persons working in the area of disability and of disabled consumers themselves, that this study will be followed by substantial federal support activity in the area of transportation for the disabled. Results from this study should impact on our society's response to transportation for the disabled for many years to come.

Five general statements may be made regarding the federal response to meeting transportation needs of persons with disabilities. (1) Federal programs for meeting transportation needs of persons with disabilities are piecemeal, fragmented, incomplete, and inadequate. (2) Comprehensive and concrete information and data, needed by the Federal Government, are generally absent. (3) The role of the court system and litigation will have an important influence on future development of Federal Government activity in this area. (4) Federal support of training programs must be increased if persons with disabilities are to increase their ability to effectively use transportation modes. (5) The central issue today is the development of a proper balance between modifying existing and new transportation systems to make them accessible to the disabled and instituting specialized transportation services for the disabled.

SCOPE AND NATURE OF TRANSPORTATION PROBLEMS

> "Nothing symbolizes more vividly this nation's ostracism of disabled people than the inaccessibility of buses, subways, trains, and airplanes" (Amicus, 1976).

ESTIMATED SCOPE OF TRANSPORTATION PROBLEMS

The Urban Mass Transportation Administration (UMTA) of the Department of Transportation (DOT) has concluded that "determining the exact number of people with transit-relevant handicaps is at this time impossible, because no comprehensive surveys oriented specifically to transportation handicaps have been undertaken" (Transportation Systems Center, UMTA, 1973). Using figures based on national population incidence rates, derived from the 1960 and 1970 Census, the Department of Health, Education, and Welfare (HEW) Center for Health Statistics has projected an estimate of the numbers of disabled persons with transportation dysfunctions. HEW's 1970 estimate is that 13.4 million disabled persons experience serious transportation difficulties. Their estimates, broken down by disability category include (Abt Associates, 1969):

Disability Category	Elderly Disabled	Non-Elderly Disabled	Total Disabled Persons
Visually Impaired	1,430,000	540,000	1,970,000
Hearing Impaired	160,000	190,000	350,000
Uses Wheelchair	230,000	200,000	430,000
Uses Walker	350,000	60,000	410,000
Uses Other Special Aids	2,280,000	3,210,000	5,490,000
Other Mobility Limitations	1,510,000	1,800,000	3,310,000
Acute Conditions	100,000	370,000	470,000
Institutionalized	930,000	30,000	960,000
TOTALS	6,990,000	6,400,000	13,390,000

Although an estimated 13.4 million disabled persons encounter serious transportation problems, the Urban Mass Transportation Administration (UMTA) estimates that over 5 million disabled persons are totally unable to use mass transit services. UMTA estimates include (Widnall, 1974):

Disabled Persons Unable to Use Mass Transit Services

Functional Difficulty	Under Age 65	65 Years and Older	TOTAL
Can Leave Home but cannot use transit	1,153,000	1,530,000	2,306,000
Homebound Persons unable to leave home	878,000	878,000	1,756,000
Institutionalized	30,000	930,000	960,000
Acute Conditions (temporary)	185,000	50,000	235,000
TOTALS	2,246,000	3,011,000	5,257,000

The United States is divided into 43 mass transit oriented urban areas. National Health Survey estimates project that 38 percent of the disabled (5,088,200) with transportation problems reside in transit oriented urban areas, 41 percent of the disabled with transportation problems (5,489,000) reside in urban areas which are automobile oriented, and 21 percent (2,811,900) reside in rural areas (Transportation Systems Center, 1973).

The number of people expected to have difficulty in negotiating public transportation in 1985 is considerable. Nearly 5.2 million citizens will be unable to change levels under their own strength. Nearly 2.4 million people will have difficulty with some or all of the following functions related to reaching, handling, and grasping; passing through a turnstile, opening vehicle doors, lifting baggage, grasping overhead supports, using handrails, and handling small change. The difficulty of sitting down or getting up while in a moving vehicle or transferring safely from a stationary position to a moving one will be experienced by 3.7 million persons in 1985. The inability to lift and carry parcels and packages contributes to the transportation problems of another 3 million persons. For either physical or psychological reasons, 4.5 million citizens will experience difficulty moving in crowds (Abt Associates, 1969).

THE NATURE OF TRANSPORTATION PROBLEMS

Finding solutions to transportation problems of the severely disabled is a complex undertaking, since different types of severely disabled persons require different types of transportation solutions. The major problems encountered by the disabled with transportation are cost of obtaining services, availability of services, physical demands made on passengers by the design of transportation facilities and equipment, and comprehension and understanding as to when transportation services are appropriate and adequate.

In a recent nationwide survey of disabled adults, transportation services were second only to vocational placement in perceived need. Most of the transportation needs of the survey sample were taken care of by friends and relatives (The Urban Institute, 1975) . In addition, disabled persons who are employed tend to locate their residences closer to their jobs than does the population as a whole, due primarily to the high cost of their transportation and the general inconvenience of the system (Abt Associates, 1969).

The disabled currently travel about half as much as the non-disabled, with the greatest differences between the two groups being in the number of social and recreational trips and the number of work-related trips. The disabled are less likely to combine trip purposes than are the non-disabled.

In addition, they tend to tire easily. The primary reasons for avoiding public transportation are the presence of barriers in the systems, fear for personal safety, and the inconvenience of the routes. Difficulties were encoutered not only with movement but with such secondary effects of the travel process as acceleration and deceleration, crowd movement, time pressure and in long walking distances. Extreme difficulty in transferring from one transportation mode to another is also frequent (Abt Associates, 1969).

Both physical and mental difficulties and travel barriers occur in combination. Hence, the elimination of one barrier, regardless of its importance, will not make the system accessible to a large portion of the population. The Department of Transportation has identified a number of travel barriers impeding or preventing access to public transportation by disabled persons. These include (Abt Associates, 1969):

PHYSICAL BARRIERS	OPERATIONAL BARRIERS
Vehicles	Vehicles
High step required to enter	Frequency of service
Difficult to get into or out of seats	Driver assistance/attitude
Seats not available/forced to stand	Acceleration/deceleration
Difficult to reach handholds	Information presentation
Cannot see out for landmarks	Schedules maintenance

No place to put packages	Inadequate or inappropriate routes
Cannot see or hear location information	Too many transfers
Nonvisible signs	
Terminals	Terminals
Long stairs	Employee assistance/attitude poor
Long walks	Information clarity and dissemination
Poor fare collection facilities	Length of stops too short
Poor posting of information	Crowd flow non directed
Poor crowd flow design	Little or no interface with other modes
Insufficient	
Poor interface with other modes	
Transit Stops	Transit Stops
Insufficient shelter	Poor location: for safety for convenience
Platform incompatible with vehicle	Not enough stops
Inadequate posting of information	Information displayed insufficient or confusing

Most of the discussion thus far has focused on the nature of transportation problems experienced by those persons with physical disabilities. The mentally retarded also encounter severe transportation problems. Maria Egg has stated the nature of the problem well:

> The ability to use public transportation is considerable qualification for membership in the society of those who are active. It is the ability that can most contribute to the enrichment of the life of the retarded. If this ability is not taught him through timeless effort when he is small, his life will get poorer and poorer as the years go by because those around him will be ever less willing to accompany him and thus provide him with change and stimulation. As parents get older, their strength diminishes, and no one takes the meanwhile grown-up mentally retarded individual (Egg, 1965).

The problem of transportation for the mentally retarded is, in general, not primarily physical, although there are problems of lack of coordination and physical fitness. The problem is primarily one of comprehension and understanding as to when transportation services are appropriate and adequate. The first big problem in teaching travel training for the mentally retarded is the lack of awareness that it can be done. The second problem in teaching is the lack of public transportation itself. The President's Committee on Mental Retardation (PCMR) concludes that

> if people with I.Q.'s as low as 12 to 18 can be trained, then why are people with I.Q.'s of 50 to 80 not trained to travel independently as a matter of course? If all mentally retarded persons with I.Q.'s over 20 can be trained to travel, 98.5% of mentally retarded persons can be so trained (Wise and Associates, 1972).

IMPACT OF LACK OF TRANSPORTATION

The impact of the lack of transportation on the daily lives of persons with disabilities has been discussed in the previous review of the nature of transportation problems. However, several additional remarks are in order.

Transportation can make the difference between meaningful work and mere subsistence, between sharing the community of one's friends or being isolated, between enjoyment of the world of art, sports, and public affairs or being deprived of these dimensions of existence. The availability of accessible transportation affects directly the quality of life. Our social institutions tend to examine service delivery from a cost-benefit approach. This is a difficult area to adequately address for how does one judge relatively intangible, quality of life factors?

Employment seems to be the area in which a handicap is most severely felt, but improved transportation, by itself, can change this situation for a limited proportion of the population. When an individual decides that he is prepared to work, then transportation becomes an important factor in the choice of a particular job. Fifty-three percent of the disabled who are employed and who reside in standard metropolitan statistical areas (SMSA's) use public transportation to go to work and for half of this group it is a factor in their choice of job. For 30 percent of those disabled persons looking for jobs, inadequate transportation is one of the reasons they have not been able to find a job and 67 percent of this group would be able to return to work if transportation were no longer a problem. The National Center for Health Statistics estimates that 13 percent of the chronically disabled population, ages 17-65, would return to work if transportation were no longer a problem (Abt Associates, 1969).

Clearly, not all of the benefits of improved public transportation for the disabled are economic. The social benefits of enabling many disabled persons to work, study, and participate in recreational activities are equally compelling. These benefits also include the reduced burden of aid on the friends of relatives of disabled persons, the increased contribution to community activities of many talented and well educated disabled persons, and the reduction of the often debilitating and productivity inhibiting emotional burdens. The psychological benefit to the person with a disability is a very important factor to be considered (Abt Associates, 1969).

EXISTING FEDERAL FINANCIAL RESOURCES AND REQUIREMENTS

There is no coherent federal policy regarding transportation for persons with disabilities. There are federal programs for the disabled and those programs are fragmented, incomplete, and largely ineffective. They have made little impact on increasing the mobility and independence of persons with disabilities.

Existing federal transportation statutes related to disability revolve around public transportation accessibility policy statements, reduced fares for the disabled on public transportation, and support of non-profit agencies serving the disabled. Each of these approaches are targeted on a single aspect of the transportation needs of disabled persons. Unfortunately, both physical difficulties and travel barriers occur in combination. Hence, the elimination of one barrier, regardless of its importance, will not make the system accessible to a large portion of the disabled population.

FEDERAL LAWS RELATING TO ACCESSIBILITY

There are five existing federal statutes which relate to accessible public transportation for the disabled (Benson and Ross, 1976).

(a) "Federal-Aid Highway Act of 1973"

Section 165(b), P.L. 93-87: Mass transit projects receiving federal financial assistance must be designed to be accessible.

(b) "Federal-Aid Highway Act of 1973"

Section 228, P.L. 98-87: Streets constructed with federal funds must have accessible pedestrian crosswalks.

(c) "Amtrak Improvement Act of 1973"

Section 6, P.L. 93-145: The National Railroad Passenger Corporation must take all necessary steps to insure rail accessibility by the disabled.

(d) "Department of Transportation and Related Agencies Appropriations Act, 1975"

Section 135, P.L. 93-391: Department of Transportation assisted facilities must be designed to meet the mass transportation needs of the disabled.

(e) "The Federal-Aid Highway Amendments of 1974"

Section 105, P.L. 93-643: Mass transit programs receiving federal funds must be planned, designed, constructed, and operated to permit accessibility.

DOT IMPLEMENTATION OF STATUTORY MASS TRANSIT ACCESSIBILITY REQUIREMENTS

Accessibility requirements and programs for the disabled do not have a single responsible administering agency within the Federal Government. Each agency is responsible for assuring compliance with statute only in its limited area of jurisdiction.

Interpretation of the above statutes is not uniform. In a brief filed in the case of Snowden vs Birmingham-Jefferson County Transit Authority, Secretary of Transportation William T. Coleman, Jr. maintained that existing federal statute "does not require that all mass transportation equipment purchased with Federal Assistance be accessible to persons confined to wheelchairs," but rather merely states a policy that special efforts be made "and leaves responsibility for determination of appropriate methods of implementing that policy to the administrative discretion of the Secretary of Transportation" (*Amicus*, 1976).

Because most existing federal laws relate to accessibility on public transportation, the single most important agency is the Urban Mass Transportation Administration (UMTA). UMTA administers a host of programs but its major thrust is in assisting local transit authorities. Even with UMTA financial aid, the 1973 estimated annual deficit of all mass transit systems in the United States was $400 million (*Accent on Living*, 1975).

In 1964, UMTA's $75 million annual budget was directed toward the preservation of urban transit service in selected cities through the conversion of failing private transit companies to public ownership. In 1974, UMTA's $1 billion annual budget was primarily devoted to the rehabilitation and expansion of existing transit properties and to the construction of new transit systems. As a condition of eligibility for federal UMTA Capital Assistance, which operates on an 80-20 percent matching ratio, local recipients of federal funds must evaluate potential alternative investments to determine which investment best serves the area's transit needs. Major mass transportation investments are to be made in increments with priority given to the more immediate need of the area (UMTA, 1976).

On Wednesday, February 26, 1975, UMTA issued proposed regulations to codify existing requirements and establish new requirements consistent with statute related to services for the elderly and disabled (UMTA, 1975C). No final regulations have yet been issued. The proposed regulation addressed the service and hardware aspects of public transit and required local transportation planners and operating officials to identify travel requirements and develop specific plans and programs to meet these requirements for disabled persons as a condition to receiving UMTA capital assistance funds. Every UMTA recipient would be required to prescribe design standards for mass transportation equipment and facilities to be utilized by the disabled.

The February proposed regulations would require the immediate commencement of a unified planning work program which should lead to the development of regional plans for meeting the transportation needs of disabled persons. All transportation improvement programs and plans must analyze and meet the transportation needs of disabled persons. Specific elements which would have to be included in all plans would be (1) an identification of the disabled persons within the urbanized area and their patterns of utilizing public transportation, (2) a description of the public and private resources presently devoted to meeting the transportation needs of disabled persons in the area, (3) a description of how public transportation systems are being used to meet the transportation needs of the disabled and, if not all needs are being currently met, an explanation of the nature and reasons for the deficiencies, and (4) a description of the alternative service improvements available to meet the transportation needs of the disabled and the justification for selecting a particular alternative. The planning requirement is intended to ensure that careful thought and study is given to the issue at the local level in view of the great variety among urban areas and the varying stages of development of transit service within those areas.

The regulations declare certain underlying assumptions which are of interest:

(1) "The elderly and handicapped form an important segment of the potential market for mass transportation services."

(2) Specific effective dates for accessible transit systems are delayed because they "denote features that are beyond the present state of the art or are now commercially unavailable and thus will require product development, tooling, or retooling."

(3) UMTA declares that "very little is known about their (disabled) actual mobility requirements and options which will vary depending on their income, degree of personal independence, proximity to existing transit, access to automobiles, attitude towards public transportation, and/or special services and a variety of other highly individual factors."

During April 1975, UMTA held six regional hearings on the regulations in Los Angeles, Denver, Chicago, St. Petersburg, Boston, and Washington (UMTA, 1975B). During the conduct of those hearings, UMTA publicly declared that "It is the policy of the Federal Government that elderly and handicapped persons have the same right as other persons to utilize mass transportation facilities and services" (UMTA, 1975A).

During the hearings, Eunice Fiorito, Director, Mayor's Office for the Handicapped, City of New York, summarized the proposed regulations in the following context:

> As a political document, these proposed regulations reflect an increasing awareness and sensitivity to the needs, or perhaps more fairly put, the abrogated rights of disabled citizens. It is an honest attempt to address a complex problem. It succeeds in many areas and needs to be far stronger in other areas. In essence it can be likened to a flabby athlete who knows he/she has the ability to perform but isn't quite in condition to do it. The regulations are simply not tough enough. There are too many loopholes, too many ways local government can cite their commonly shared fiscal shortfalls and not do justice to the intent of these proposed rules (Fiorito, 1975).

Many of the spokesmen for disabled persons believed three major problems are involved with the proposed UMTA regulations: (1) UMTA refuses to commit the resources necessary to require both an accessible mass transit system and a specialized door through door transportation service. Spokesmen for the disabled are divided with some advocating that priority should be placed on one approach over the other. (2) UMTA is reluctant to encourage manufacturers and require transit authorities to immediately utilize existing technology to solve transportation problems of the disabled. (3) UMTA has laid the responsibility on the disabled constituency with the statement that very little is known about the mobility requirements, program options, and numbers of transportation disabled persons requiring services. And to repeat, no final regulations have been issued.

ACCESSIBILITY AND MOTOR CARRIERS

On July 17, 1975, the Interstate Commerce Commission (ICC) issued proposed regulations requiring special assistance and terminal facilities for disabled passengers of Motor Common Carriers (Interstate Commerce Commission, 1975). The regulation states that "no carrier shall deny transportation to any person on the basis of a handicap, physical disability, or blindness or because that person cannot board a bus without assistance, provided that such person can occupy a seat without disturbing other passengers."

The ICC issued this regulation to be consistent with Section 216 (a) of the Interstate Commerce Act which requires motor common carriers of passengers to provide safe and adequate service, equipment, and facilities for the transportation of passengers and their baggage. The regulations require special assistance and terminal facilities for handicapped, disabled, blind, and elderly passengers in boarding buses. All bus terminals shall be designed and constructed so that accommodations are accessible to disabled passengers.

ROLE OF THE ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

The Architectural and Transportation Barriers Compliance Board (A&TBCB), established by the "Rehabilitation Act of 1973" (P.L. 93-112) is mandated to investigate and examine alternative approaches to the transportation barriers confronting disabled individuals, especially in the area of public transportation. The Secretary of the Department of Transportation must be a member of the Compliance Board. The Board is to determine how and to what extent transportation barriers impede the mobility of disabled individuals and to consider ways in which travel expenses in connection with transportation equipment in private transportation.

ACCESSIBILITY AND AIRLINE CARRIERS

The past several years have witnessed federal agencies attempting to make a judgment regarding the rights of disabled persons to travel by air. The central question is do physically disabled persons threaten the personal safety of passengers on public air carriers to the extent that their personal right of access be limited?

In 1962, Dr. Ludwig Lederer, chairman of the U.S. Scheduled Airlines Medical Committee issued standardized criteria for the carriage of the physically handicapped based upon the medical criteria for passengers flying. Dr. Lederer concluded that "persons whose behavior might be hazardous to other passengers" and "persons who have malodorous conditions, gross disfiguration, or other unpleasant characteristics so unusual as to offend fellow passengers should not be transported by any member" (Randolph, 1973).

In October 1971, the Civil Aeronautics Board (CAB) asked the Federal Avaition Administration (FAA) for a determination of the relevant safety parameters associated with the carriage of disabled persons on the commercial airlines. On May 30, 1973, the FAA issued an advanced notice of proposed rule making placing restrictions upon "persons handicapped to the extent that they offend other passengers and those who require undue attention from the flight attendant" (FAA, 1973).

The FAA cites a survival accident in Denver in July 1961 whereby many of the passengers perished simply because the airplane was not evacuated soon enough. Because successful evacuation is directly related to the flow rate through emergency exits, FAA rules now require emergency evacuations within 90 seconds. The FAA argues that the number of disabled persons must be limited so as not to jeopardize their safety or that of others during evacuations (FAA, 1973). The FAA's underlying assumption is "that handicapped persons will cause most, if not all, of the difficulties in an emergency evacuation of an airliner" (Randolph, 1973).

The FAA identified seven specific problems related to transportation of disabled persons by air carriers. (1) The need for standardized evacuation criteria and procedures. (2) Types of disabled persons requiring special attendant or assistance to travel. (3) The need to limit the number of disabled persons per flight. (4) Limitations on the number of unassisted disabled persons to be accepted as passengers on an aircraft at any one time. (5) Determination of acceptable levels of safety for large groups of disabled passengers. (6) Limitations on the length of planned flights when disabled persons wish to travel. And, (7) requiring disabled passengers to obtain identification cards. Other FAA problem areas included: (1) Training ticket agents and flight attendants to serve disabled passengers, (2) Special seating arrangements of disabled persons on flights, and (3) Special provisions on aircraft to accommodate such items as leg braces (Randolph, 1973).

In September and October 1973, the FAA conducted regional hearings on their regulations in Miami; Rochester, Minnesota; Boston; Rosemont, Illinois; and Washington. Criticism of the regulations by spokesmen for persons with disabilities was overwhelming.

On July 5, 1974, the FAA again issued proposed regulations (FAA, 1974B). These regulations established restrictive quotas and seating arrangements for the disabled. Physically disabled individuals were required to submit to the airlines a written statement signed within the preceeding six months by a licensed physician that they did not need the assistance of others to expeditiously evacuate the airplane. The total number of disabled persons without certification per flight could not exceed the number of emergency exits. On August 4, 1974, the Civil Aeronautics Board (CAB) issued proposed regulations that commercial airlines conform to the July 5, 1974 FAA proposed regulations (CAB, 1974).

In the late summer and early fall of 1974, a bipartisan group of U.S. Senators and Representatives (13 senators on August 9, 1974 and 20 representatives on October 15, 1974) forwarded a joint letter to FAA Administrator, Alexander Butterfield expressing disapproval of the July 5, 1974 proposed regulations (Randolph, 1974). The Congressional letter cited Section 404 (b) of the Federal Aviation Act which prevents discrimination against any passenger by the commercial airlines. They quoted Section 504 of the Rehabilitation

Act of 1973 which prevents discrimination against disabled persons by recipients of federal grants. And the members of Congress strongly objected to the FAA's use of Section 1111 of the Federal Aviation Act against the disabled. Though mentioning the personal safety of passengers, the section was enacted to protect the airlines against the threat of hijack. The letter declared that the FAA had abused its interpretative authority to use Section 1111 against the access right of disabled persons.

The FAA responded by inviting organizations representing persons with disabilities to a series of informal meetings to discuss the draft regulations (FAA, 1974A). Final regulations have yet to be issued.

The Civil Aeronautics Board (CAB) has established a "Disabled Traveller Assistance Program" whereby complaints against the airlines may be made by calling the CAB Consumer Section on 202-382-1735. The number only answers 8:30 to 5:00 Monday through Friday, with a recording answering all other times.

REDUCED FARES

Section 5(m) and Section 108 of P.L. 93-503, the "National Mass Transportation Assistance Act of 1974," requires mass transit programs receiving federal financial assistance to charge reduced fares to the disabled during non-peak hours (Benson and Ross, 1976).

Many persons with disabilities do not accept reduced fares as an adequate approach to solving their transportation problems. Rachel Rodriquez claims: "What good is a reduced fare if I can't get on the bus? I think a lot of handicapped people would be willing to pay higher fares, as long as they could go where they wanted to when they wanted to" (Stinson, 1975).

GRANTS TO NON-PROFIT AGENCIES

Section 301 of P.L. 93-87, the "Federal-Aid Highway Act of 1973," authorizes federal grants to non-profit agencies serving the disabled by amending Section 16(b) of the "Urban Mass Transportation Act of 1964" (Benson and Ross, 1976).

The Section 16(b) (2) program granted $20 million in fiscal year 1976 and estimates grants totalling $22 million in fiscal year 1977. Non-profit agency recipients must make a five year commitment to continue the transportation service whose equipment is purchased under 16(b) (2). The program is a capital investments program, to be used to purchase buses and equipment. Funds may not be used as operational subsidies to fund ongoing programs. It is the responsibility of each state to select among projects, and, in turn, submit these to the Urban Mass Transportation Administration (UMTA) for review and approval (UMTA, 1974B).

Through a grant program for non-profit private agencies, the program has direct relationship to other transportation systems. UMTA Administrator Frank C. Herringer has stated that "the regular transit operator still must play the lead in satisfying the transportation needs of our elderly and handicapped people" (UMTA, 1974A).

There is also language in the Urban Mass Transportation Act prohibiting competition of UMTA supported programs with private industry. UMTA has no coherent policy statement regarding the issue of liability of the UMTA recipient to the private industry under 16(b) (2). Any private transportation agency is free to sue whoever they wish if a threat is perceived. In Wisconsin and Oregon, UMTA is being threatened with being sued by private taxi companies and negotiations are proceeding. Any 16(b) (2) suit would have to be brought against both the State Transportation Agency and UMTA to be considered in court. The actual non-profit agency recipient could or could not be a party to the issue of cost. Most private transportation systems for the disabled are extremely costly and thus impose undue hardship on persons with disabilities. The issue remains unclear and is most probably a situation which will not occur (Ross and Weimer, 1975).

DOT SUPPORTED RESEARCH

In December 1974, the Department of Transportation (DOT) launched a $1.4 million research program on transportation problems of disabled persons. The overall objective of the research project is to determine the travel requirements of various classifications of disabled persons and to develop viable transportation service alternatives utilizing all modes which can satisfy such requirements cost effectively. The central issue to be addressed is the cost/benefit trade-off between developing the needed transportation service by modifying existing and new transportation systems to make them accessible to the disabled and instituting the specialized transportation services for the disabled (U.S. Department of Transportation, 1974).

The Urban Mass Transportation Administration currently has three research projects operational which impact on the disabled. (1) The "BART Impact Study" is attempting to analyze the impact of the first major rapid transit system constructed in the U.S. in the past 50 years with special attention to disabled and elderly users. (2) UMTA's "Study of Physical Barrier Free Transit for the Elderly and Handicapped" seeks to identify and evaluate all available "off-the-shelf" hardware which facilitates the use of public urban transit systems by the disabled and elderly. (3) UMTA"S "Small Bus Design" includes features which address the needs of disabled persons, including wheelchair use (Office for Handicapped Individuals, 1975).

UMTA's "Transbus" program is a DOT competitive program to develop a new 40 foot transit bus that will set the standard for urban transportation for years to come. Three manufacturers - AM General Corporation, General Motors Truck and Coach Division, and Rohr Industries are developing models.

The objective underlying Transbus is to remove physical travel barriers to the elderly and disabled. Transbus will also have wider doors and a floor only half as high as that on current buses (UMTA, undated). The Rohr Industries model uses a ramp, the General Motors model uses a lift, and the AM General model is made to use with a raised platform at each stop. Disabled persons in Philadelphia recently criticized the AM General model because sidewalk platforms were too high and the buses contained inadequate provisions for keeping wheelchairs stationary (Accent on Living, 1975).

OTHER FEDERAL SUPPORT PROGRAMS

A variety of other federal programs potentially can support transportation services. But each of these programs is inadequate, and transportation is a secondary thrust of the program. Such sources include the Vocational Rehabilitation Program, the Medicaid Program, the Social Services Program, and the Developmental Disabilities Program. When supported, transportation services are limited under these programs to certain narrow activities and certain designated target populations.

POSSIBLE FUTURE DIRECTIONS

LITIGATION AND THE COURTS

Numerous law suits have been filed involving accessible public transportation. The fundamental contention asserted by disabled plaintiffs is that Congress (and in some cases state legislatures) has mandated accessible transportation services for the disabled. Further, they maintain that these laws, coupled with established constitutional principles guaranteeing freedom of movement and equal protection, require federal and local transit authorities receiving federal funds to provide accessible services.

The response of defendants is that the legislation in question is nothing more than a broad, non-imperative statement of national policy, requiring little more than the present research and demonstration programs and certainly not requiring any delay or significant alteration of ongoing federally funded programs. These persons maintain that there is no constitutionally guaranteed right to accessible transportation and that whatever services disabled persons receive will be entirely at the discretion of America's transit policymakers.

Resolution of such litigation will probably ultimately be resolved by a finding depending on if technological expertise exists and if such technology is available for production (Amicus, 1976).

If one monitors all transportation litigation, one will find decisions and statements from the court reinforcing each side of the argument. A few examples might be revealing.

(1) Judge Nathanil Sorkin, New York Civil Court: "Discrimination against any group on an irrational and unjust basis is an affront to any civilized people . . .. Our constitution guarantees that neither the nation nor the states shall discriminate against any group . . .. Equal access is important. not because the law may require it, but because fairness and logic, the touchstones of the law, compel it" (Randolph, 1973).

(2) Judge in Snowden vs. Birmingham-Jefferson County Transit Authority: "Access to public transportation is not a fundamental right . . .. Any discrimination that in fact exists results from technological and operational difficulties . . .. The constitution as a continuously operative charter of government does not demand the impossible or the impracticable" (Ross and Fuller, 1976).

TRAINING NEEDS

The ability to use existing and improved transportation modes is closely related to the quality of rehabilitation training, and especially mobility training, that the person with a disability has received. The success of a program to eliminate travel barriers will be enhanced by an accompanying program to reach a larger proportion of the disabled population with higher quality mobility training. This is true regardless of the type of disability encountered (Abt Associates, 1969; Harold J. Wise Associates, 1972).

ALTERNATIVE TRANSPORTATION APPROACHES

A number of approaches can be taken to remove travel barriers from public transit and alleviate problems of mobility, access, and usage by persons with disabilities. Some approaches are (Abt Associates, 1969):

(1) Upgrade existing or planned systems.

The basic goal in upgrading existing and planned systems would be to remove physical barriers and make these systems accessible to all people living within reach of the system. Buses would be equipped with ramps or hydraulic lifts for wheelchairs, more stanchions, wider doors, handrails, and so forth. Also rail terminals would be improved with elevators or escalators. Capital cost estimates for these improvements are (1) $5,000 per bus for 50,000 existing urban transit buses; (2) $0.8 million per rapid rail transit stop for about 800 stops nationally; and (3) $0.5 million per stop for 200 stops in new systems (METRO, Atlanta and others). The total cost for these alterations nationally would be about $990 million. The extra users who would gain most from this option would be the 700,000 disabled persons who live within two blocks of public transit, but who cannot use this transit because of current physical barriers. The new hardware would also prove beneficial to a number of disabled persons who currently use urban transit with some difficulty, and to non-disabled individuals temporarily encumbered with luggage, packages, camping gear, small children and the like.

(2) Dial-a-ride feeder-distributor.

A Dial-A-Ride feeder-distributor service would expand the utility of existing service by adding both a demand-responsive and a broader area coverage dimension. By providing appropriate interface with existing transit, a Dial-A-Ride feeder-distributor would establish door-to-door service for the 3 million urban elderly and those disabled persons who do not have severe transportation dysfunctions (and for other potential transit users) who live more than two blocks from fixed-route transit. By equipping 10 percent of the Dial-A-Ride and fixed route fleets with special hardware, the 1.2 million urban disabled who currently "can go out, but can't use transit" would also enjoy door-to-door service. At a cost of $2.2 billion annually (operating costs and annualized capital costs) 4.2 million disabled and elderly persons would gain access to a transit system with no effective physical or operational barriers. There are no current urban-areawide demonstrations of this concept.

(3) Ubiquitous fixed-route service.

Another way to extend service to those urban disabled persons and elderly not within reach of existing systems would be to approximately double the existing bus fleet. This would allow the establishment of new routes in areas presently not served. The expense would be approximately double the current bus operating expense annually, or an additional $2.2 billion a year. Ubiquitous fixed-route service would introduce 4.2 million potential users to the market, but would not improve accessibility for those handicapped who cannot use the system because of physical barriers on the buses. The key advantage of this option is that it would provide expanded service for all transit users.

(4) Transit stamps.

An effective way to deal with economic barriers may be the issuance of transit stamps to those disabled and elderly persons with income below a designated point. The stamps would serve as fare for the bearer. The expense of any transit stamp program would be a function of the number of people covered and the number of stamps each was issued. Assuming that stamps were issued to the 1.5 million elderly below poverty level and within two blocks of transit, for a 70¢ round trip 5 days a week, 50 weeks of the year, the annual expense would be $260 million.

(5) Coupon taxi.

The coupon taxi option is a mechanism for providing very good service to highly selective target groups. It is assumed that each recipient in the target group would receive $500/year in coupons and that, on the average, the recipient would spend only 50 percent of this sum (coupons would not be transferrable). Cost figures of $300 million/year assume a target group of the 1.2 million people in urbanized areas who "can go out, but can't use transit" at a cost of $250/person/year.

DEMAND RESPONSE vs INTEGRATED ACCESSIBILITY

A survey of 25 affiliates of United Cerebral Palsy Associations reaffirmed that even with appropriate modifications, some individuals' disabilities are so severe that they are unable to utilize public transportation without assistance. Thus, specialized services using door through door techniques must be developed and financially supported as a necessary alternative. The central issue today is the development of a proper balance between modifying existing and new transportation systems to make them accessible to the disabled and instituting specialized transportation services for the disabled. The overriding question is whether or not a demand response system will be accepted by the disabled constituency at large as an interim, or complementary, or supplemental measure or will be regarded as an inherently inferior program which will only impede the development of totally integrated, accessible mainline systems (United Cerebral Palsy Associations, Inc., 1975).

Specialized routed demand response systems have certain clear advantages over improvements in the existing mass transit system. These advantages include:

(1) Specialized equipment could be designed to accommodate physical disabilities and mechanical aids.

(2) Door-through-door service could be provided, eliminating the need to transfer from one mode to another within the area served.

(3) Problems associated with crowds can be overcome in a system limited to the use of the disabled.

(4) The need to maintain balance in a moving vehicle, to wait standing, or to ride without a seat can be eliminated.

(5) Acceleration, deceleration, swaying and bounce can be controlled more effectively.

(6) Vehicles can be operated by drivers trained to assist the disabled who require assistance.

The Department of Transportation concludes that more information about the market for a specialized system will be needed to be certain that it is viable. However, it does appear to be economically feasible for areas with relatively concentrated populations of 150,000 or more, at a price that the majority of the disabled are willing to pay. Such a system could operate in less populated areas if it were used during off-peak periods for purposes other than handicapped travel, such as group excursions or package delivery. The success of such a system will be highly dependent on a substantive scale marketing effort and a scale of operation that is large enough to provide the disabled with better service at lower cost than is presently available from taxi companies (Abt Associates, 1969).

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TRANSPORTATION MODEL: BENEFIT-COST FOR ELDERLY AND HANDICAPPED PERSONS

TRANSPORTATION MODEL: BENEFIT-COST FOR ELDERLY AND HANDICAPPED PERSONS

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INTRODUCTION

There is a growing awareness that the transportation needs of the elderly and handicapped population are not being adequately met by available modes of public transportation. The reasons why these transportation needs are not being adequately met are intricate and varied. They involve a complex interplay between economics, technology, planning, politics, ridership markets, transit management, and the rising expectations of the elderly and handicapped population.

The total U.S. population that is elderly and/or handicapped was estimated at 26.5 million by the U.S. Department of Transportation in 1970. Of that total, approximately 7 million of the elderly (persons age 65 and older) were handicapped to a degree such that the use of existing mass transportation services is difficult or impossible. The percent of those 65 and over increased from 8.2 percent of the U.S. population in 1950 to 10.1 percent of the population in 1970. Age projections by the Bureau of the Census suggest that the population cohorts over 65 will continue to increase until year 2000.

There are some transportation services available in a few geographic locations within the United States that meet the transportation demands of handicapped and elderly persons. The purpose of this paper is to identify the following important aspects of these services:

1. Problems specific to the handicapped and to the aged.
2. Types of transportation models available to provide services in areas of shopping, social service, medical trips, job training, employment, church trips, and recreation.
3. Costs of operation and cost per ride.
4. Benefits derived out of this system.

1a. Problems Specific to the Handicapped: The transportation needs of handicapped people are spread throughout the day and include work trips, medical and shopping trips, access to training, and recreation trips. The handicapped are disabled in different ways and to varying degrees. The most severely handicapped cannot be moved at all or require stretcher or ambulance service. Some severely handicapped persons are restricted to electric or manual wheelchairs. Other handicapped people are blind or use walkers. More are restricted by limited limb use and other permanent and temporary disabilities.

1b. Problems Specific to the Aged: A portion of the elderly population face transportation problems similar to the problems of the people who have severe physical limitations. A recent study (The Abt Associates, 1974) of public transportation systems for the handicapped and elderly revealed the following facts:

Although 80 percent of the elderly have some kind of chronic condition, they are surprisingly mobile: only 20 percent report mobility limitations. Of these, about 8 percent are limited in mobility, but are able to get around either on their own or with a mechanical aid. Six percent need the help of another person in getting around, and 5 percent are limited to their home by their condition. The physical limitations generally brought about by the aging process include reduced vision and hearing, a lengthening of reaction time and a limiting of coordination generally reflected by a decrease in walking speed and the performance of other motor tasks.

Many of the elderly do not drive, and many have low fixed incomes. They are, therefore, often transit dependent. Their major transportation needs are for basic shopping, social service, and medical trips. Social, recreational and church trips are also important to elderly people. The elderly and their desired destinations are frequently spatially distributed in a manner that is not easily coordinated with existing public transit routes. Also, the times of day of the needed trips are often not consistent with transit schedules. Furthermore, older persons are sometimes confused by the schedules--this compounded by diminishing hearing and sight.

Many of the elderly cannot, or simply will not, negotiate the often long walk to a bus stop, wait in inclement weather, climb onto a bus, or stand on a bus. Maneuvering into a seat while the bus is in motion is a psychological as well as a physical barrier. Furthermore, carrying packages from a shopping trip on a transit bus is often a chore even for the younger and ablebodied. The medical services needed by the elderly are often consolidated in clinics and medical centers; hence longer medical trips are required. Also, supermarkets are becoming located further and further from areas where elderly people with low incomes live.

MODEL

In order to resolve the existing problems, a "demand responsive transportation service" is recommended (U.S. Department of Transportation, 1974).

The basic operation of a demand responsive transportation service involves dispatching a vehicle in response to a telephoned request for service to carry the patron to his destination, while simultaneously accommodating in the vehicle other patrons whose requests for service are compatible in terms of both time and geography. The actual number of intermediate stops made between the origin and destination of a particular passenger will vary with the pattern of demand responsive transportation service offered, the time of day, the capacity of the vehicle, the level of service offered, as measured in terms of waiting time and travel time for passengers, and other parameters of a particular service.

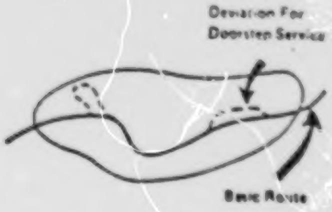
The patron's request for service may be made just before the trip is to be made, or in advance. A particularly important case of advance request is subscription service provided to patrons who wish to utilize the service on a daily or other regular basis.

The basic elements of a demand responsive transportation service are thus: a fleet of vehicles, a means of communication between the patron and the service, a means of communication between the service and the vehicle drivers, and a control center to receive requests for service and schedule and dispatch vehicles. Around these basic elements, the concept of demand responsive transportation service lends itself to a variety of configurations in terms of organizational character, degree of automation, equipment, work force, service patterns, size of service area, and market role.

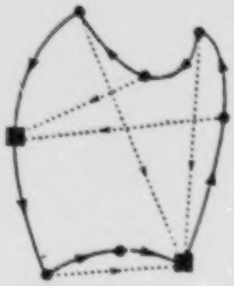
There are two kinds of demand responsive transportation service. The first, route deviation, is a limited form, in which a vehicle will deviate from a regular fixed route to pick up or discharge a passenger at a requested location, typically within several blocks of the main route (Fig. 1). The more common kind is known as "pure" demand responsive service, wherein the routing and scheduling of vehicles depend entirely on the particular requests of patrons.

Three variants of the pure form may be employed as a basic service pattern:

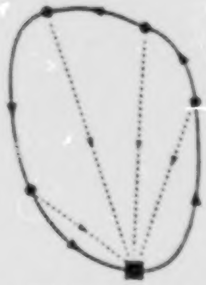
1. Many-to-one providing transport from several origins to a common destination, such as a shopping center or bus terminal (Fig. 2).
2. Many-to-few providing transport from multiple origins to a few destinations, such as major activity centers or points on a downtown loop (Fig. 3).
3. Many-to-many providing transport between any origin-destination pair in the service area without limitation (Fig. 4).



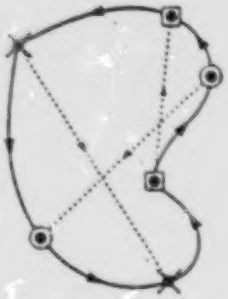
(1) ROUTE DEVIATION



(3) MANY-TO-FEW



(2) MANY-TO-ONE



(4) MANY-TO-MANY

■ : Main terminal, transfer point, activity centre
·····▸··· : Desire line
—▶— : One possible dynamic routing
◉ ···· ◉ : Origin and destination pairs

2a. Examples of Models and their Costs: The following example demonstrates how a "many-to-many" model is being utilized in the predominantly rural New Jersey area (Pioneer on Wheels, 1975).

Pioneer on Wheels, (POW), Inc. is a transportation program which services elderly and handicapped in the predominantly rural New Jersey counties of Warren, Hunterdon, and Sussex. The door to door (model: many-to-many) service is available throughout a 3,600 square mile area. POW operates 36 vehicles (4 eleven-passenger vans, 8 sedans, and 24 station wagons). The original program, on a small scale, was established in 1968 through federal government funding ($23,000). Subsequently, POW received a series of other financial support from various federal and state groups to expand its mission. Since this time, the program has gradually expanded to its present state, an operation annually costing a quarter of a million dollars.

A part of this expenditure is supported by funds received from two state agencies for both the POW I (Services for the elderly) and POW II (transports handicapped). It should be stressed that funding sources are not permanent and much of POW is self-supportive. Agencies, such as the Rehabilitation Commission, Commission for the Blind, local school boards, and many others, contract for POW to supply transportation on a regular basis to their clients.

People call the POW office in their area at least 24 hours in advance of the time the ride is needed. The POW vehicles are usually kept at central points, and it is the driver's responsibility to pick up the vehicle each morning. About 75 percent of the driving staff for POW I are elderly and about 50 percent of the drivers for POW II are elderly. There is an average of six hours of driving per day per person (hours may vary). Many of the drivers as well as schedulers are volunteers and so provide POW with free labor and, in some respects, extra concern and dedication.

The POW's director has found that elderly prefer to ride in cars as opposed to vans, particularly because vans are relatively high above the ground, and it is very difficult for many elderly to board the vehicle. POW has set aside Thursdays and Fridays as the preferred days for shopping trips. They have found that 1-1/2 hours to 2 hours is adequate time for shopping. The success of the programs is due to decentralized, relatively autonomous local offices. Specific vehicles and drivers are assigned to each office.

AVERAGE EXPENSES AND SERVICE CHARACTERISTICS

	POW I:	POW II:
Operating Expenses Per Month (Includes drivers, salaries, insurance, maintenance, fuel, etc.)	$9,075.00	$14,000.00
Cost per Mile	.43	.35
Cost per Trip	7.50	12.75
Cost per Client	3.00	3.75
Miles Travelled	22,000	40,000
Trips Made	1,200	1,100
Clients Per Trip	2.5	3.95
Miles Per Trip	18	35

The difference in the characteristics is due to the following facts:

1. Average trip length for the elderly is about half that of handicapped.
2. Number of people per trip is more in POW II than POW I.
3. Participants in the POW II program usually are transported to activity centers which are generally located great distances from the individual's residence.
4. The elderly tend to request rides to places close to their homes, for example to local stores and nutrition programs.

The taxi industry has recently indicated some interest in participating in the development of "demand responsive transportation." However, taxi drivers need more education in how to handle handicapped and aged people and their physical aids (walker, wheelchair, etc.).

Up to the present, subsidizing of such taxi operations has come mainly from specific federal programs and has been limited to specific rides for specific purposes only (DHEW (OHD) 75-20081, 1975).

The taxi industry is seeking a role in federal programs, asserting that taxis are a large and vital part of public transportation. It is difficult to estimate the total number of taxis in operation because surveys tend to cover only fleet operators, ignoring the large numbers of independents. However, according to the International Taxicab Association, in a state-by-state survey conducted in 1973, there were 7,200 fleets in operation, with a total of 170,000 taxicabs (or about 24 cabs per fleet).

In 1970, it was estimated that taxis carried 2.38 billion passengers, or more than one-quarter of all passengers hauled by public transit (International Taxicab, Assoc., 1973). More important than these numbers is the fact that in hundreds of communities across the country, taxis are the only form of public transportation.

In this context, it was considered useful to examine the experience of some of the communities that have instituted programs of taxi fare reductions for the elderly.

On June 21, 1972, Arlington County launched a "senior adult pilot transportation project (Project 33)," funded under Title III of the Older Americans Act and administered by the Arlington County Department of Transportation in cooperation with several county service organizations. The elderly (60 years and older), living in geographically defined portions of the county, and registered as Project 33 members are entitled to ride taxis of the Arlington Yellow Cab Company for a flat fare of 15¢. The county (26 square miles) population in 1970 was 174,284; and, of this, 7.9 percent or about 13,800 were 65 years of age or older. Local county estimates the number of persons age 60 and above at about 20,000 as of 1974. The county is primarily residential; there is no agriculture, and industrial activity is small. Income levels are high, and in 1970 the county ranked 15th nationwide in terms of median family income (U.S. Department of Commerce, 1972).

As of October 1974, there were about 800 members, or nearly 40 percent of the target group of about 2,000 considered to be potentially eligible. At this time a decrease in Federal support made it necessary for Arlington County to further restrict service offered in the county. These restrictions have caused the rate of registration to decrease and monthly trips have fallen to less than half what they were at their peak a year ago. Similar programs are in operation in Bronx, New York; El Paso, Texas; Independence, Kansas; and Missoula, Montana.

2b. Example of Many-to-Few: Lift-Line, a system in Florida, provides a free, nearly county wide fixed route system linking low income neighborhoods to social welfare and medical service facilities. The project was developed as a two year demonstration project with funds from the Florida Department of Transportation (for vehicles and equipment) and from the U.S. Department of Health and Rehabilitation Services ($300,000 for operating expenses).

Lift-Line uses seven 23 passenger Flexette buses in their service, augmented by one 12 passenger Flexette bus with hydraulic lift for wheelchairs and one 12 passenger bus. Each is equipped with a two way radio to be used in the dispatching operation. The system operates on a weekday basis over approximately an eight hour day; and the buses travel six routes ranging in length from 24.4 to 87.6 miles per round trip. Each route is covered at least two, and as many as four times per day. Vehicle (9) miles for the first year totalled 370,668. The cost per one way passenger trip for the first year was $1.39 and per vehicle mile came to $0.46.

Another example of many-to-few is "An Authority Approach to Specialized Transportation," Delaware, which uses a two way radio dispatch fleet of vehicles, (9 station wagons, 12 vans, 16 mini-buses, and orthopedic and special care vehicles for wheelchair clients) averaging 10,500 trips per month (Povlitz, 1974). The system receives funding from state, local, federal matching, private agencies such as Easter Seal Society, United Cerebral Palsy, and the United Fund of Delaware.

A study conducted by the Technology Sharing Program Office at the Transportation System Center, Cambridge, Massachusetts, in cooperation with the office of the Secretary of Transportation and UMTA, on May 1, 1974, indicates that there are 51 demand responsive transportation services operating in the United States. The distribution of service patterns is as follows (U.S. Department of Transportation, 1974).

Many-to-Many	35
Many-to-One	3
Many-to-Few	5
Combined Service Patterns as Indicated Above	8

The above data suggests that the many-to-many model is the most desired one. But a combined model like many-to-few in peak hours and many-to-many in off-peak hours maximizes the systems efficiency.

Benefits: The financial benefits can be compared in terms of cost. But benefits such as social benefit, long term vocational growth, psychological benefit, are very difficult to measure on an economic scale. Various authors mentioned that transportation aid facilitates the following benefits to elderly and handicapped people

Transportation Aid

1. Increases mobility for various population groups, eliminates stress associated with driving under congested conditions, provides relief for the suburban mother's station wagon syndrome, etc. (U.S. Department of Transportation, 1974).

2. Assists individuals to maintain their independence, preserves their dignity and improves the quality of life (Spaulding, 1974).
3. Provides service for obtainment of medical benefits and obtainment of recreation (Schauer, 1974; Weaver, 1972; Duffy, 1975; Weiss, 1975).

CONCLUSION

Automobile users in the United States enjoy the luxury of personal convenience and consume 55 percent of all energy used for transportation. On the other hand, buses consume only 0.2 percent of the total energy use while getting four times as many passenger miles per gallon according to 1970 figures (Vaughan, 1973). Further development of mass transportation systems in both urban and rural areas for all transit dependent people would: (i) reduce the increasing expense of cars, (ii) reduce the absorption of petroleum of which cars intake "one half of our supply" and (iii) reduce environmental degradation.

For example in California, cars are responsible for 92 percent of carbon monoxide, 71 percent of nitrous oxides, and 61 percent of organic gases in the air.

Other transportation related industries and products create problems as well. Petroleum refineries create air and water pollution. A billion gallons of lubricating oil is discharged yearly and is a major factor in the population the U.S. inland waters and oceans. Seven million cars and two hundred million tires are junked annually thus contributing to a solid waste problem. Extensive use of private vehicles creates other environmental problems as well. For example, it is estimated that 5 million private vehicles are visiting our parks annually and are having a devastating effect on our forests and wildlife (Kasun, 1973).

Wider usage of public transportation would greatly reduce these problems. To insure wider use by all citizens, the development of accessible transportation systems must be carefully planned.

It is recommended that the following points as stipulated by the Urban Mass Transportation Administration under "Major Travel Barriers--listed by area of impact" (U.S. Department of Transportation, 1973) be critically observed in the development of such systems:

I. PHYSICAL BARRIERS
  A. Vehicles
    1. High step required to enter
    2. Difficult to get into or out of seats
    3. Seats not available, forced to stand
    4. Difficult to reach hand holds
    5. Cannot see out for landmarks
    6. No place to put packages
    7. Cannot see or hear location information
    8. Non-visible signs

B. Terminals

1. Long stairs
2. Long walks
3. Poor fare collection facilities
4. Poor posting of information
5. Poor crowd flow design
6. Insufficient seating
7. Little interface with other modes

C. Transit Stops

1. Insufficient shelter
2. Platform incompatible with vehicle
3. Inadequate posting of information

II. OPERATIONAL BARRIERS

A. Vehicles

1. Frequency of service
2. Driver assistance/attitude
3. Acceleration/deceleration
4. Information presentation
5. Schedules maintenance
6. Inadequate or inappropriate routes
7. Too many transfers

B. Terminals

1. Employee assistance/attitude
2. Information clarity and dissemination

3. Length of stops too short
4. Crowd flow non-directed
5. Little or no interface with other modes

C. Transit Stops

1. Poor location: for safety and convenience
2. Not enough stops
3. Information displayed insufficient or confusing

It is difficult to provide a firm guideline of transportation costs. However, a recent study (U.S. Department of Transportation, 1974) indicates that the revenue cost per hour is $13.43 for a Telebus system. The breakdown of this system is as follows:

Operator's wages	$5.85 (44%)
Fuel and maintenance . .	$2.00 (15%)
Capital	$1.41 (10%)
Overhead	$4.17 (31%)

On a more general basis, it is likely that a typical van service operating in an urban setting will cost in the range of 50-70 cents a vehicle-mile and about $1.20 to $1.40 per passenger trip, with a typical trip length of about 2 to 3 miles. In rural areas the costs appear higher: about 60 to 80 cents a vehicle-mile, and perhaps, $3.50 to $7.50 per passenger trip, with a typical trip length of about 7 to 10 miles.

It should be readily apparent from the above data that the differences between the systems are due to the following facts:

1. The varying density of the market to be served, ranging from rural to inner city urban.
2. The differences in wage rates and fuel costs and, therefore, the overall level of costs.
3. The differences in service characteristics.
4. The differences in number of ridership per trip
5. The differences in average trip lengths.

The future technology of a demand responsive service includes the areas of computer dispatching, automatic vehicle monitoring, automatic scheduling, fully dynamic routing, and advanced management analysis systems. Prototypes of these technological developments are available today. For example, computer dispatching has been simulated by researchers and is presently being demonstrated in Haddonfield, and UMTA has demonstrated Automatic Vehicle Monitoring (AVM) with the Chicago Transit Authority bus system (U.S. Department of Transportation, 1974).

Much more work is needed to address the complex issues involved in integrated services, such as (1) cross linkage between various transportation services within a particular area which will avoid vehicle down time and include wider population, (2) tradeoff between demand responsive transportation, fixed route, and taxi services.

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THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT: INFLUENCE AND IMPACT ON SUPPORTING ALTERNATIVE COMMUNITY BASED LIVING ARRANGEMENTS FOR PERSONS WITH DISABILITIES

THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT: INFLUENCE AND IMPACT ON SUPPORTING ALTERNATIVE COMMUNITY BASED LIVING ARRANGEMENTS FOR PERSONS WITH DISABILITIES

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INTRODUCTION

The Housing and Community Development Act was signed into law as P.L. 93-383 by President Ford in August 1974. For the first time, significant provisions for fostering alternative living arrangements for disabled persons have been established in federal statute.

However, P.L. 93-383 is permissible, not mandated, legislation as it relates to persons with disabilities. The act specifically permits, authorizes, and allows for the creation of means and mechanisms to serve the disabled, but it does not require that the housing needs of the disabled be met. The act merely broadens potential opportunities for the disabled. There is no affirmation of the rights of the disabled to housing. There is no delcaration of a national housing policy related to disability.

P.L. 93-383 for the first time clearly establishes the eligibility of disabled persons to federal housing benefits. It is this eligibility which advocates at the community level may utilize in developing community based living arrangements for disabled persons. But eligibility alone, without sponsorship or advocacy, does little to stimulate production in a highly specialized field.

The Department of Housing and Urban Development (HUD) is the federal agency responsible for implementing P.L. 93-383. It is the department which administers the federal government's vast array of housing finance programs. It is essential that persons interested in developing housing for disabled persons recognize that the type of housing is determined by the type of financing.

PHILOSOPHY AND CONCEPTS OF HOUSING

Community organizations that plan new housing for disabled persons should keep in mind that the financial investment will come from persons who may not share ideals or concepts which hold current legitimacy in the field of disability. These financiers may not understand that housing related to special needs is much more than shelter or brick and mortar; that providing living arrangements for the disabled is frequently a service; and that housing is the base from which other services may be nurtured. Because of the importance of this fact, this paper will review currently held concepts of appropriate living environments for disabled persons.

A good beginning is to start with an excerpt from a public speech by Dr. Phillip Roos, national executive director, National Association for Retarded Citizens:

> We are beginning to recognize that the environment in which a person lives holds a certain message for that person. What makes a home? As I understand it, a home is a place of residence which meets some basic human needs: security, a place where one feels safe; it's a place of privacy, it's a place for personal property, a place where one has a feeling of belongingness, it's a place where we belong, it's a place where one has some self-esteem, it's a place where one can control at least a small segment of one's world.

Traditionally, residential care of the developmentally disabled has either been a family responsibility or an institutional responsibility. The large public institution has been the mainstay for residential care for more than 100 years. Most are multipurpose institutions caring for all levels of the severely and multiply disabled of all ages. Most have self-contained programs. Most are custodial in approach. Most have inadequacies of program, physical plant, staff, and budget. Today, we are changing this traditional mode. We know and we can document that the developmentally disabled, with proper support, can reside in the community at large.

No single model of appropriate housing is ideal. Rather, a housing program which is appropriate to the functioning level of the individual with a disability, can be developed and offer a home-like environment. Underlining current residential programs are assumptions that the program be community based, that housing be as normal to the life of non-disabled persons as possible, that group housing be conventional in appearance, that the size be typical of the size generally found in the neighborhood, and that all necessary supervision, guidance, and supportive services be available. Individual choice is an essential component in the development of residential programs for disabled persons.

A home should be conceptualized as an environment that supports one's goals, one's values, and one's lifestyle. Housing is shelter, one of the three basic necessities of life. But housing for persons with severe disabilities includes a housing-services combination needed to sustain and foster a normal living arrangement. Housing must be developed with many varieties of type permitting the disabled person choice and option.

Neighborhood characteristics and opportunities are as important as the housing itself. Accessibility between the environment and the housing is essential. The basic consideration in the selection of a housing site is availability of opportunities for community involvement in a normal, generally residential neighborhood.

THE EVOLUTION OF FEDERAL HOUSING PROGRAMS SERVING THE DISABLED

Since 1964, all federal housing legislation has provided eligibility for physically disabled persons and some persons with mental retardation on an equal basis with the elderly. However, from 1964-1975, only eight projects identified for the disabled were funded by HUD. These projects provided about 1,000 dwelling units. In contrast, from

1957-1975, 700,000 dwelling units for the elderly received HUD assistance.

On April 13, 1973, Senator Robert Dole (Kansas) introduced a proposal drafted by United Cerebral Palsy Associations as S. 1579, "Housing Opportunities for the Handicapped Act." On July 31, 1973, Senator Dole, supported by UCPA testimony, appeared before the Senate Committee on Banking, Housing, and Urban Affairs advocating passage of S. 1579.

While UCPA pushed passage of S. 1579, the elderly constituency approached Senator Harrison Williams (New Jersey) to revise the Old Section 202 housing construction program for the elderly. Meanwhile, the National Association for Retarded Citizens worked to eliminate restrictions placed upon eligibility of the mentally retarded for HUD supported housing benefits.

The efforts culminated in Representative William B. Widnall (New Jersey) introducing H. R. 14080, the "1974 Housing Act for Older Americans and the Handicapped." This bill was primarily the work of a devoted professional staff member, Mercer L. Jackson. The bill received the warm endorsement of Representative Barber B. Conable (New York), Chairman of the House Republican Policy Committee; Representative Robert H. Steele (Connecticut), Chairman of the House Republican Task Force on Aging; and Representative Lou Frey (Florida), Chairman of the House Republican Research Committee.

On April 4, 1974, Representative Edward Koch (New York) introduced Senator Dole's bill in the House as H.R. 13984. When the Senate passed what was to become P.L. 93-383 an amendment was introduced by Senator Alan Cranston (California) to create a special research authority to support demonstrations in the area of special housing for disabled persons. The Cranston amendment passed. Amendment efforts by Senators Dole and Robert Taft (Ohio) to include the contents of S. 1579 in the general housing bill failed.

Two things became abundantly clear when reviewing the efforts to amend the nation's housing laws in 1974 to address the needs of the disabled: (1) the housing needs of the disabled were advocated by only a handful of national organizations and these efforts were undertaken in a very fragmented manner, and (2) congressional support for housing benefits targeted to persons with disabilities was clearly bi-partisan in scope and concern.

With the enactment of P.L. 93-383, the disabled constituency attempted to overcome this fragmentation. The 22 national organization members of the Consortium Concerned With the Developmentally Disabled (CCDD) established a task force on housing. Task force members were the National Association of Private Residential Facilities for the Mentally Retarded (NAPEDMR), the National Association of Coordinators of State Programs for the Mentally Retarded (NACSPMR), the National Association for Retarded Citizens

(NARC), United Cerebral Palsy Associations (UCPA), and the National Easter Seal Society for Crippled Children and Adults (NESSCCA). UCPA serves as chairman of the task force. The CCDD task force has closely monitored and attempted to influence implementation of P.L. 93-383.

THE POTENTIAL OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT

P.L. 93-383, the Housing and Community Development Act of 1974, reflects the federal government's desire to return authority and resources to responsible and accountable local officials. The central theme of the act is that local government be granted much flexibility and independence regarding control of funds and priority setting. The act attempts to tie housing programs together with community development and public service programs. The priority objective of P.L. 93-383 is the development of viable urban communities with emphasis on decent housing for persons of low and moderate income.

P.L. 93-383 authorizes a number of financing mechanisms. This type of housing will be greatly determined by the type of financing and its accompanying rules and regulations.

Community Development Program

The Community Development (CD) program attempts to assist local government agencies to develop viable urban communities including decent housing, suitable living environments, and expansion of economic opportunities for low income persons. Eighty percent (80%) of CD funds are allocated to metropolitan areas.

Community Development funds are awarded to local government--cities and counties. CD application and plans must provide assurances that prior to their submission citizens have received adequate information about funds to be applied for and public hearings have been conducted to obtain the views of citizens. Citizen participation is a mandated requirement of each community applying for CD funds.

The Community Development program is not a housing program but many of its activities are prerequisite to or companion of actual housing programs. The act earmarks funding of special projects directed to the removal of material and architectural barriers which restrict the mobility and accessibility of the disabled. Acquisition, construction, reconstruction, or installation of neighborhood facilities, parks, playgrounds, and other recreational facilities open to the disabled is also permitted.

The Community Development annual plan has a direct and immediate impact on housing programs. The act [Section 104(a)(4)] mandates that every plan accurately survey the condition of the housing stock and assess the housing needs of the disabled. This is a mandated requirement. The annual plan and the mandated survey are the basic vehicles to be used to target federal funds on the housing needs of persons with disabilities.

Congregate Housing

Section 7 of P.L. 93-383 directs HUD to encourage local housing agencies to design, develop, and acquire, to meet the special needs of persons, congregate housing. The act defines congregate housing as housing in which not all the dwelling units have kitchen facilities and housing which connects living units to a central dining facility.

Rental Assistance

Section 8 of P.L. 93-383 is the primary housing assistance program of the federal government. Section 8 authorizes HUD to pay the owner of rental property the difference between the contract rent and the portion of the rent payable by the family as determined in accordance with HUD established schedules and criteria. The housing assistance payments will be the difference between not less than 15 percent nor more than 25 percent of the family's gross income. The extent of medical or other unusual expenses incurred by disabled individuals will be considered when their rent subsidy amount is computed.

For purposes of HUD eligibility, a person will be considered eligible on the basis of disability if he: (1) is defined as disabled under the Social Security Act; (2) is defined as disabled under the Developmental Disabilities Act; or (3) has a disability which is expected to be of long-continued and indefinite duration, substantially impedes his ability to live independently, and is of such a nature that such ability could be improved by more suitable housing conditions.

Section 8 payments made on behalf of individuals must be consistent with the local government's Housing Assistance Plan (HAP). The office of the chief executive of the city or county is responsible for the development of the HAP, generally under the supervision of the Local Housing Authority (LHA) and with consultation from the local housing codes and conservation departments.

Each Housing Assistance Plan (HAP) must include the following items: (1) a complete survey of the condition of the local housing stock and needs of certain groups, including the disabled; (2) a realistic annual goal for assisted housing development; (3) a list of priorities for meeting housing demand; (4) an identification of general housing locations that will provide community support facilities in relation to housing to promote community development; and (5) provision of citizen participation in the development of the plan through public hearings.

There are three exceptions to the requirement that housing sponsors planning to use Section 8 payments be included in the Housing Assistance Plan. These exceptions include: (1) applications for new or substantially rehabilitated housing which involves 12 or fewer less units; (2) housing located in federally assisted new communities, and

(3) housing financed by state housing agencies except where a unit of local government objects in its HAP to such housing.

The role of general local government in utilizing Section 8 is critical in providing leadership; in directing the community's comprehensive planning and development efforts; in coordinating them; and in integrating the comprehensive planning, community development, and housing components with the community's capital and operating budget. Getting into the Housing Assistance Plan (HAP) requires an organized and well substantiated request for housing for disabled persons.

Section 8 allocations are given to each HUD Area Office. These funds become a "drawing account" against which local housing sponsors can make application. All housing applications (except for the three waivers cited above) must be in compliance with the local HAP.

There are basically three options used in developing housing under Section 8. These are new construction, purchase of an existing structure, and leasing all or part of an existing building. The type of housing will largely determine the financing route. The housing classification that is set may affect eligibility for certain services or the income eligibility standards established which qualify residents. Currently, a conflict is occurring with HUD preferring to utilize existing housing and Congress wishing to construct new housing to stimulate the economy. Section 8 generally does not permit development loans or other financing but can be used in conjunction with development programs.

Start-up Loans

The Section 106 (B) program provides seed money loans to cover planning expense of a housing project in advance of availability of permanent financing and technical assistance. Related to this is the Section 106 (A) program which authorizes grants to public or private nonprofit organizations to permit them to obtain technical assistance. HUD has not funded the 106 (A) program and organizations have not yet fully utilized the 106 (B) program.

The purpose of the 106 (B) program is to help sponsors build or rehabilitate housing. Eligible for the loans, which are made on a two year short term bases, are nonprofit housing sponsors and public housing agencies. Seed money is a front money advance to cover early planning expenses. Among the early costs are preliminary surveys and analyses of the market; preliminary site investigation; architectural fees; land options or purchase; application and mortgage commitment fees; construction loan fees; administrative overhead; and related miscellaneous expenses.

Receipt of a 106 (B) loan is subject to approval by Local Housing Authorities and the loan must be consistent with the Section 8 local Housing Assistance Plan (HAP).

Section 106 (B) loans are limited to 80 percent of the estimated preliminary costs with the sponsor providing the other 20 percent. HUD charges no interest rate on the loans and advises sponsors to charge their loans to their mortgages. Information is available from the HUD Area Office.

Insured Mortgages

HUD's Section 221 (d) (3) and (d) (4) programs permit HUD to insure private mortgages for newly constructed and substantially rehabilitated housing. The (d) (3) program insures 100 percent of the mortgage for nonprofit sponsors of housing. The (d) (4) program is targeted to profit sponsors only. These mortgage insurance programs are not subject to local Housing Assistance Plan (HAP) requirements but can be combined with Section 8 rent subsidies.

Housing Construction Loans

HUD's Section 202 program, as revised by P.L. 93-383, permits HUD to make direct federal construction loans to nonprofit developers of housing programs for the elderly and handicapped. Only projects that receive contracts for Section 8 rent subsidy payments will be eligible to participate in the Section 202 program. Though totally neglected in all HUD regulations, P.L. 93-383 requires all Section 202 projects for disabled persons to be in support of and supported by the applicable State Developmental Disabilities Plan.

In June 1976, HUD awarded $375 million in Section 202 construction loans to 136 sponsor applicants. Unfortunately, of these 136, only 16 elderly projects were designated to include large numbers of disabled persons and only 17 of the sponsors planned housing specifically for the disabled. The 1976 Section 202 awards were made by HUD central office staff in Washington, D.C. HUD's 1977 awards are supposed to be made by the HUD Area and Regional offices. Contact point is thus the HUD Area Office.

Role of State Housing Agencies

Section 802 of P.L. 93-383 encourages the formation and effective operation of State housing finance and development agencies to provide housing for low and moderate income families. With the current scarcity of federal housing construction funds, it is the state housing agencies which can provide construction funds to developers planning housing programs for the disabled.

The main function of state housing agencies is to use the bond financing mechanism with a tax exemption to provide loans to developers of housing at below market interest rates. Section 802 authorizes HUD to guarantee obligations of a state housing agency issued to finance development activities. HUD is permitted to cover 33-1/3 percent of the interest on obligations assumed by a state housing agency. Unfortunately, HUD has never implemented Section 802. One incentive to using state housing agencies, is that these agencies may receive up to 50 percent of the state's total Section 8 rent subsidy allocation to support state agency housing development.

Rural Housing

P.L. 93-383 is targeted upon rural areas. However, Title V of the act authorizes rural housing programs to be administered by the Farmers Home Administration (FmHA) of the United States Department of Agriculture (USDA).

The FmHA Rural Rental Housing (515) program authorizes loans to design and construct rental housing in rural areas. Loans are mode at market rate, 8-1/8 percent of up to 40 years. 515 projects average less than 15 dwelling units per project. There has never been a 515 project specifically designed for the disabled but nothing in the act nor its implementing regulations prohibit such development. The FmHA 514 Rent Supplements programs is designed to pay rent subsidies to eligible persons residing in 515 financed units.

The Housing Assistance Council, a HUD supported non-profit organization based in Washington, D.C., maintains a revolving loan program which provides loans to housing organizations to develop housing in rural areas. The Council assists such sponsors to receive HUD and FmHA long term financing. When these sources of financing are received by the local housing sponsor, the Council is reimbursed its loan.

Special Demonstrations

Section 815 of P.L. 93-383 authorized HUD to undertake special demonstration projects to determine the housing design, the housing structure, and the housing related facilities and amenities most effective or appropriate to meet the needs of groups with special housing needs, including the disabled.

HUD Central Office Contact

The HUD Central Office maintains a special office to act as liaison to any agency interested in working with HUD related to specialized housing for disabled persons. The office has no program authority but may provide information or referral to information regarding programs discussed in this paper. Interested readers should write Mrs. Helen Holt, Assistant to the Secretary, Programs for the Elderly and the Handicapped, Room 7144, Department of Housing and Urban Development, 7th and D Streets, S.W., Washington, D.C. 20410.

SPECIAL IMPLEMENTATION PROBLEMS

General Problems

The 1974 Act does not set forth a specific program for disabled persons but assumes the HUD mechanism will be adopted to help develop special programs for disabled persons. The act does not discuss functional impairments and their relationship to types of housing. The act does not discuss nor identify complementary services. The act does not contain precise guidelines nor suggestions. The act contains no affirmation of the rights of disabled persons to housing. There is no declaration of a national housing policy related to disability.

The Lack of Knowledge

There is practically no knowledge among housing developers of the meaning of adaptive housing. HUD itself has no experience in delineating the variety of disabling conditions and matching appropriate housing types to specific needs. HUD has been reluctant to involve itself in the area of housing for the disabled. When they do become involved, they frequently design housing which disabled persons do not want because of the stigmatization that the "project" will have in the public mind. There are few HUD officials, at any level of the structure, who posses knowledge of housing for disabled persons.

Agencies and individuals who know the disabled population and their needs are not knowledgeable in the housing field and housing professionals are not knowledgeable in the services fields. The necessary experience, learning, and education among the various sectors concerned with specialized housing has not yet occurred.

Relationship to the Elderly

HUD has demonstrated a misunderstanding that legislation dealing with housing for the elderly has added the disabled and so housing for the elderly and disabled are equated. There are numerous documented examples where HUD offices refuse to approve only housing for the disabled without approving elderly inclusion. From the highest levels of HUD, the needs of the elderly and disabled are thought to be analogous.

Service Responsibility/Sponsorship

Some agency must be prepared to accept responsibility for finding a means of securing services and of performing the management function required by specialized housing. Development of successful community based living arrangements for persons with severe disabilities cannot be achieved by utilizing HUD supported programs alone. Successful implementation requires an existing agency with experience both in service delivery to the disabled and hopefully in some aspect of long term care or long term management to make the commitment of sponsorship.

Service and housing integration requires specific and astute planning in the use of funds. Shelter is frequently only the beginning, not the end. Firm housing and services partnership should be formed at the beginning of the planning process.

The difficulty of marrying services and housing begins with Congress. Service programs and housing programs are the jurisdiction of separate committees. Programs are then administered by separate agencies. States receive and administer funds from different sources with different requirements.

Management Responsibility

Experience over the years has shown that the success or failure of housing developments is directly related to the adequacy of the management program, the manager, and the management staff. Successful management requires skills in fiscal and social goals, in tenant-management relations, and in service-housing integration. A proposed 1978 HUD requirement in the Section 8 program, is that managers must have completed specified training as a condition of budget and managerial salary approval. Thus HUD is underwriting the basis for the professionalization of housing management. Unfortunately, the disability field has yet to develop specialized training in the management field, especially as it relates to housing.

Architectural Compliance

The "Architectural Barriers Act of 1968" (P.L. 90-480) was enacted to insure that federally financed public buildings are designed and constructed to be accessible to the physically disabled. Unfortunately, the General Accounting Office (GAO) has concluded that "HUD has not developed policy criteria that realistically reflect the act's intent and the needs of potential handicapped residents." HUD has not established a system to monitor compliance, has not surveyed nor investigated compliance, nor have HUD area offices maintained required project files pertaining to compliance with the act. It was the intent of P.L. 90-480 to include publicly owned residential structures as accessible to the physically disabled. However, HUD regulations apply only to residential structures "which are intended for occupancy by the physically handicapped." HUD's existing design standards reflect separate and isolated standards for the elderly and disabled as opposed to "other" housing.

Zoning

Zoning is viewed by HUD as a local governmental area of jurisdiction and HUD will not intervene to encourage removal of local zoning ordinances which prohibit non-related individuals from residing together.

CONCLUSION

The "Housing and Community Development Act of 1974" has vastly increased the potential of using federal funds to develop community based living arrangements for persons with disabilities. However, local government may still overlook the needs of the disabled in order to meet other priorities. Successful use of HUD programs will depend upon continuing and effective advocacy efforts and sophisticated housing sponsorship initiatives. HUD implementation currently is a series of obstacles which promote inappropriate housing development. Efforts are required to eliminate these obstacles and develop a truly sensitive and responsive system. P.L. 93-383 is only the first step and we have learned that it is the easiest step.

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HOUSING AND RESIDENTIAL PROGRAMMING
FOR THE HANDICAPPED

HOUSING AND RESIDENTIAL PROGRAMMING FOR THE HANDICAPPED

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INTRODUCTION

Consideration of the housing and residential programming needs of the handicapped leads in many directions and has many implications for rehabilitation. Information on housing is drawn together from diverse sources, including the literatures pertaining to diverse disability groups, and to analyze the current situation with respect to: (1) needs of the handicapped for housing and residential programming; (2) models currently applied to meet those needs; (3) the costs and advantages and disadvantages of alternative models; (4) and the problems and policy issues involved in carrying out a coherent national plan to meet the housing and residential programming needs of the handicapped.

Until the last 10 years the housing and residential programming alternatives for the handicapped were extremely limited. For the physically handicapped, and many persons with sensory handicaps, the bulk of the problem centered on architectural barriers. Not only was there no interest in or legislation concerning the removal of barriers in work spaces and public places of all kinds, but the severely physically handicapped could not access most standard housing, at least without paying for considerable renovation and modification.

Finding living quarters which are accessible, convenient, and affordable is the essence of the handicapped housing problem today. This problem is distinct from the residential programming.

The residential programming problem of the handicapped has a somewhat different coloration and affects the mentally as well as the physically disabled. For the person who needs extensive support, there used to be only two widely available options--institutionalization or accommodation in one's natural home. If the spinal cord injured person left a rehabilitation hospital, the choice was often inappropriate placement in a nursing home or another institutional environment if return to the home was impossible. For the mentally ill and mentally retarded, lack of adaptation in the natural home often precipitated long-term institutionalization, and even if release were considered, the only options were abrupt return to a previous home or establishment of a new one. In all of these cases, the handicapped person often needed what was simply not available--a middle ground between a highly structured institution and a highly unstructured independent living situation. While the housing problem for the handicapped involves finding a suitable place to live, persons who need residential programming need more than a physical environment to which they can adapt. They need a physical and social environment which maintains and optimizes their functioning levels, through the provision of personal aides, supervision, training, and so forth.

The housing and residential programming issue as a whole, then, can be conceptualized in terms of physical and social environmental support. Some handicapped persons need physical support in the form of architectural design, environmental adaptation, or equipment to meet their physical needs in the areas of mobility, health, and communication. Others require a supportive social environment offering supervision, personal services, and/or training. Many require combinations of these. Moreover, the physical and social environments interact (e.g., social adjustment training of the mentally retarded can be maintained and enhanced if they live in small, homelike physical facilities located in the community rather than in isolated institutions in the country).

ESTIMATING NUMBERS OF HANDICAPPED PERSONS IN NEED OF HOUSING AND RESIDENTIAL PROGRAMMING

The problems of estimating numbers of handicapped persons who need various housing and residential programming alternatives are immense. First, prevalence figures for the disabled population are inconsistent. However, even if the numbers of of persons with various disabilities were known, these figures would not suffice as estimates of persons in need of housing and residential programs different from what they currently have. A relatively large proportion of the disabled population is not so limited functionally that special accommodations are necessary. Many of the estimates of housing needs are undoubtedly underestimates when they focus only on those persons who are presently availing themselves of current options. Just as it is difficult to determine how many people need automobiles before automobiles have been invented, it is difficult to determine how many people would use innovative residential alternatives if they existed and were available in quantity.

With that as background, the following sections present some figures on the numbers of handicapped persons who might be expected to need further alternatives. Figures are presented separately for the generic category of the severely disabled, the physically disabled, the mentally retarded, and the mentally ill. For the latter two groups, some information is provided on the trend toward deinstitutionalization, as this trend, in conjunction with the development of community residential alternatives, has already signalled a shift in residential needs.

THE SEVERELY DISABLED

One means of inferring the housing needs of the handicapped involves estimating the numbers of persons of all disability groups who are very severely impaired functionally and thus might be expected to require physical and/or social environmental support. According to Urban Institute (1975) data, there were 23,300,000 disabled persons ages 18-64 in 1975, 3,900,000 of them severely disabled and 4,200,000, "most severely disabled."

The latter group would be the disabled persons most in need of special housing arrangements. The Urban Institute indicates that due to differences in methodology and definition, hard data concerning the prevalence of severely handicapping contitions are lacking. The following table, however, summarizes prevalence estimates of most severely disabled persons by age group. (See table 1).

TABLE 9-1
ESTIMATES OF NUMBERS OF NONINSTITUTIONALIZED MOST SEVERELY DISABLED PERSONS*

Age Category	Estimated Number
Under 18	188,000
18-64	4,200,000
65 and over	3,900,000
Total	8,288,000

Prepared from Urban Institute (1975)

*According to the Urban Institute (1975) definition, "most severely disabled" persons are individuals whose "health kept them from working at all and who actually were not in the labor force during the year prior to the survey, or who had become permanently disabled during that year."

A substantial percentage of these noninstitutionalized persons are inadequately housed at present. According to the Urban Institute's (1975) analysis of a 1970 Census sample of households with disabled persons, about 15 percent of the disabled dwell in substandard housing. This figure rises to to one out of five among the severely disabled, as compared with one out of 10 among the partially disabled. According to the Urban Institute report, this difference is partially, but not entirely, a function of the income differential between the severely and partially disabled.

Through interviews with persons considered too severely disabled to have been accepted by vocational rehabilitation, the Urban Institute learned that the majority (54.3 percent) of 889 respondents lived in houses owned by themselves or their families. Another 20.7 percent lived in rented houses; 15.4 percent in rented apartments, trailers, or condominiums; and only 3.4 percent in nursing homes, sheltered care homes, or hospitals. This would suggest that many severely disabled persons may be most in need of adaptation of single family dwellings.

The Urban Institute also attempts to estimate the numbers of persons who are severely disabled in institutional settings. Table 9-2 reports the institute's findings, based on an estimate, of the percentage of the institutional population likely to be severely disabled, in the sense of requiring institutional care for over 30 days. Overall, based on various data sources, the Urban Institute estimates that there are 1,786,876 severely disabled persons in institutions, including various psychiatric and alcoholic and drug treatment centers, state and private facilities for the mentally retarded, nursing homes and intensive care units for the aged, and chronic disease hospitals.

TABLE 9-2
ESTIMATED NUMBER OF PERSONS IN INSTITUTIONS WHO ARE SEVERELY DISABLED

Using as Percentages:

Psychiatric (80%)		Mentally Retarded (90%)		Aged (100%)		Chronic Disease (100%)	
Age	Total	Age	Total	Age	Total	Age	Total
18	13,532	3	470				
18-24	32,323	3-21	65,819			25	2,418
25-34	33,270						
35-44	41,856	22-61	82,744			25-44	3,087
45-54	56,225					45-64	7,617
55-64	58,739			65	195,600		
65+	79,906	+62	7,679	65+	924,073	65+	12,070
Total	315,851(431,532)[1]		156,712(179,212)[2]		1,150,940		25,192

Grand total: 1,786,876 severely disabled, 93.3 percent of the total population in institutions.

[1] Total including federally funded community mental health centers.

[2] Total including number of residents in private facilities.

Source: The Urban Institute (1975), p. 87.

About one-third are estimated to be of working age (18-64). Although these figures are rough, the institutionalized population must be considered a major target group for alternative residential settings.

Combining the figures for the institutionalized population with estimates of the "most severely disabled" population yields an estimate that about 10,074,876 persons of all ages were severely disabled in 1975 and might be expected to have at least some needs for special housing or living arrangements.

Next, we examine more closely some estimates pertaining to the physically disabled, mentally retarded, and mentally ill.

THE PHYSICALLY DISABLED OR MOBILITY IMPAIRED POPULATION

Jeffrey (1973) cites an HEW figure of approximately 30 million individuals in the United States who are suffering from a permanent or temporary physical disability. However, one out of 10 of these persons, or three million people, are estimated to have mobility limitations which prevent the use of many buildings and facilities due to the existence of architectural barriers.

The total number of physically disabled individuals is expected to increase to possibly 40 million by 1985 given current population growth (Jeffrey, 1973). This figure takes into account the increasing number of elderly individuals in the population, as well as the increase in certain disabling conditions such as spinal cord injury, spina bifida, and cerebral palsy. Wars and work accidents have also contributed to the total number of physically disabled persons, as have medical advances which have reduced the mortality rate from many disabling conditions.

The following table indicates the prevalence of selected disabling conditions which are associated with mobility limitations:

TABLE 9-3
SELECTED DISABLING CONDITIONS ASSOCIATED WITH MOBILITY LIMITATIONS

Spinal Cord Injury	200,000	quadriplegics and paraplegics*
Multiple Sclerosis	250,000	
Muscular Dystrophy	200,000	(135,000 children)
Cerebral Palsy	600,000	
Legally Blind	450,000	
Arthritis & Rheumatism (ages 18-64; noninstitutionalized)	2,201,000	
Amputees	300,000	(70% lower limbs)
Spinal Deformities	1,135,000	
Spina Bifida	27,500	
Hemiplegia or Hemiparesis	340,000	

Source: Adpated from National Academcy of Sciences (1974)

*Figure provided by Fay (1975)

The housing needs of the physically disabled are extremely diverse and are largely determined by the severity and type of mobility limitation. It would be imprudent to assume that all physically handicapped persons have special housing and residential needs. While the very severely disabled are to a large extent dependent on others for assistance with their personal needs and daily activities, many of these individuals could return to the community if accessible facilities which combine living arrangements and adequate support services were made available. In many cases the severely disabled individual is able to manage personal needs and daily activities with the aid of prosthetic devices and minimal amounts of care and supervision. If accessible housing were available, many of these individuals could live alone. Others might require or prefer a group living situation, utilizing shared services such as attendant care and help with housekeeping, cooking, shopping, and so forth. Regardless of what type of living environment is appropriate or preferred, the removal of architectural barriers is crucial for those with mobility limitations. According to Fenton (1972), independent housing facilities, including apartments or private homes which are accessible and incorporate special features, comprise one of the largest single needs for housing for the physically disabled at present.

THE MENTALLY RETARDED

The institutionalized mentally retarded population was estimated in 1969 as approximately 200,000 (Klaber, 1969), and has been decreasing since. In 1971, the President of the United States established a national goal that nearly one-third of these individuals be returned to the community. While most of the retarded in institutions live in facilities specifically designated for the retarded, others have been placed in state mental hospitals. In 1971, there were some 29,272 persons diagnosed as mentally retarded residing in state mental hospitals (United States Department of Health, Education, and Welfare, 1973).

A recent study by Rosen and Callan (1973) found that 63 percent of institutionalized retardates were classified as severely or profoundly retarded. Rosen and Callan point out that their 63 percent figure represents an increase over previous studies. This is presumably due to the trend toward the use of community-based residential facilities for the mildly and moderately retarded, which is eliminating to some extent the need for institutionalization of less severely retarded individuals. Furthermore, many state facilities are now admitting only persons classified as severely and profoundly retarded (Rosen & Callan, 1973).

Scheerenberger (1975) reports data on deinstitutionalization trends from the years 1970-1974 which are reflected in table 9-4.

TABLE 9-4
POPULATION TRENDS IN PUBLIC RESIDENTIAL FACILITIES FOR THE MENTALLY RETARDED

Year	Population at Year's End in Facilities Studied
1970	155,920
1971	153,343
1972	151,204
1973	147,050
1974	141,972

Source: Scheerenbergen (1975)

The percent of decline in population from year to year ranges from a 1.7 percent decline from 1969 to 1970 to a

3.5 percent decline from 1973 to 1974. Scheerenberger (1976) reports an overall decrease of 8.9 percent, and estimates a current total of 176,000 persons in 235 public facilities. Based on the increase noted above in the proportion of institution residents who are severely and profoundly retarded, it can be assumed that most of the discharged residents fall in the moderate to borderline categories.

The majority of respondents (72 percent) of the Rosen and Callan (1973) study indicate that the total institutional population has decreased in their facilities due to increased community placement over the previous five years. The greatest number of residents (18 percent) had returned to their own homes to reside with parents or guardians. Other placements included nursing homes (14 percent), group home placements (11 percent), foster homes (8 percent), family situations with other than the natural family (7 percent), and intensive nursing care facilities (5 percent).

The advantage of placing severely and profoundly retarded individuals in community-based homes has been questioned. Conley (1973) states that "it is doubtful if any substantial advantage could be derived from placing them in small community-based group homes." Included in his "doubtful" group are some residents with IQ's over 40, but having severe physical disabilities or behavioral problems. Conley conservatively estimates that over one-half of residentents with IQ's over 40 and at least one-fourth with IQ's of 25-30 could probably be placed successfully in less custodial situations. At the other extreme, some have argued for the total replacement of large institutions with smaller community-based models.

Nearly all severely and multiply handicapped retarded persons have long-term dependency needs. If they are not institutionalized, most often the burden of care is placed on parents and families. When the parents die or are no longer able to care for these individuals at home, some form of public-supported residential care is necessary (O'Connor, 1976). While most individuals with an IQ of 50 or less will almost surely need some form of residential care or sheltered living arrangement for a significant portion, if not all, or their lives, many of these persons could undoubtedly benefit from a less sheltered situation than is currently afforded by institutional placement (Eyman, et. al., 1972).

Conley (1973) states that the potential demand for community-base living arrangements among noninstitutionalized adult retardates is "tremendous." He continues by stating that the actual estimation of needs for this group is nearly impossible. There is no way of knowing how many retarded adults currently living with friends or families in the community would want or benefit from alternative living situations if they were made available.

The total noninstitutionalized adult retarded population as of 1970 has been estimated to be around 2.68 million. Of these, approximately 6.7 percent had IQ's between 25 and 50 and around 93 percent had IQ's between 50 and 70 (Conley, 1973). Conley estimates that 25 percent of these in the 25-40 IQ category, 50 percent of the 40-49 group, and 5 percent of the 50-69 group would seek alternative accommodations if they were available. These should be interpreted as very rough estimates.

THE MENTALLY ILL

During the past decade, mental hospitals throughout the United States, even more so than state schools for the retarded, have experienced sharp decreases in numbers of inpatients and new admissions. This is partially attributable to the development of Community Mental Health Centers and community residential alternatives for the mentally ill. In 1955, the resident hospital population was 559,000. By 1964, the population had decreased to under 500,000. As of 1970, the number had fallen to 339,000. The decline is continuing, as evidenced by data from 1974 which indicated 215,500 inpatients on state hospital rolls. If these trends continue, the national inpatient hospital population may be 100,000 by 1980 (Rutman & Egan, 1975).

Santiestevan (1975) notes that this deinstitutionalization trend has been particularly marked among the elderly mental hospital population. In 1969, there were 133,264 elderly inpatients, but at the end of 1973, there were only 89,912.

Rutman (1976) concludes that on the basis of a "reasonable estimate," perhaps 30 percent to 40 percent of all mental patients currently hospitalized, and most of the new clients entering the mental health system, can be cared for more effectively and less expensively in community-based residential settings.

Taken as a whole, these figures do not provide a clear picture of numbers of persons in needs. The needs themselves are somewhat clearer, as the next section reveals.

MAJOR DIMENSIONS OF THE PROBLEMS AND THEIR SOLUTIONS

While the handicapped have many problems in the area of housing and residential programming, two major problem areas stand out and are responsible for much of the current legislation and activity in the field. In this section, problems in housing associated with architectural barriers and problems in residential programming associated with the traditional institutional model are briefly overviewed. Major developments in legislation which set the context for and shape current solutions, and pose problems in themselves are reviewed. Attention then shifts to the major conceptual models which have guided the development of solutions to housing and residential programming problems.

PROBLEMS ASSOCIATED WITH ARCHITECTURAL BARRIERS

The widespread existence of architectural barriers comprises one of the greatest obstacles to the achievement of a normalized life for the physically handicapped individual.

Not only are the physically disabled barred from access to many public buildings and private businesses, but many times they are left in insecure and potentially dangerous situations due to architectural barriers in the home. Lack of accessible housing and transportation can frustrate plans for education and the achievement of career goals as well. The psychosocial consequences of architectural barriers cannot be measured (The Urban Institute, 1975).

A 12-state study performed by the Urban Institute (1975) of individuals rejected by vocational rehabilitation because of severity of handicap reveals that 10.5 percent of the study sample had moved to another house or apartment because of environmentally imposed limitations. Most had moved to new living arrangements without stairs or to ground level homes or apartments. Respondents stated that this factor was by far the leading determinant of their housing choice. The next most frequently mentioned decision criteria were wider doorways, followed by the inclusion of special features and elevators (The Urban Institute, 1975).

Problems caused by barriers in the home ranged from getting in and out of the residence to grooming and homemaking activities. The number of Urban Institute respondents that reported experiencing difficulty was 143 (16 percent). Table 9-5 indicated the number and percent of the 143 reporting various problems in the home.

TABLE 9-5
PROBLEMS ASSOCIATED WITH ARCHITECTURAL BARRIERS

Problem Caused by Architectural Barriers	No.	Percent*
Getting in and out of residence	65	45.4
Moving from room to room	59	41.2
Getting from door to street	66	46.1
Doing homemaking activities	41	28.6
Bathing	45	31.4
Toilet	30	25.8
Grooming	25	17.4
Other	19	13.2

Source: The Urban Institute (1975), p. 245

*Column exceeds 100% as some respondents mentioned more than one problem

Clearly, the study indicates that a wide range of barriers are encountered in the home environment. Respondents were also asked reasons why these barriers had not been removed. Most of their answers concerned the cost of removing barriers (87 percent). Other than costs, reasons cited included not knowing how or where to get help for the removal of barriers (7 percent) and feeling that the problem was minor (10 percent).

Kliment (1975) has outlined typical barriers the physically disabled individual encounters in and around his home or apartment. These barriers, summarized below, are typical of existing standard housing and apartment complexes.

Kitchen	Storage areas too high. Cabinets, counters, and cooking areas can only be reached by parking a wheelchair parallel. Door swings which obstruct free movement in a wheelchair.
Bathroom	Showers without grab bars, seat, safety controls, water overflow controls, non-slip surfaces. Too small and narrow doorways.
Dining Room	Table undersides too low to permit a wheelchair to slide under.
Bedroom	Arrangement of beds and other furniture obstructs movements of wheelchair and prevents transfers. Mattresses too low.
General	Audible doorbell and alarm systems not suitable for deaf. Windows, draperies, heat and light switches, fire alarms out of reach for the wheelchair bound or are inoperable by other with physical or coordination difficulties. In apartment complexes, doors leading to hazardous areas (basements, etc.) not identifiable by blind.
Parking	Narrow, non-level spaces prohibiting the transfer to wheelchair or crutches. Curbs or steps from parking area to sidewalk. Gratings and joints in sidewalks inhibit wheelchair movement.
Approach to Building	No curb cuts or curb cut blocked by a vehicle. No snow removal. Step between sidewalk and entrance level. Ramp, if provided, too steep for wheelchair or crutches.
Entrances	Doorways too narrow to permit access to wheelchair. Revolving doors. Distances between outer and inner doors to short. Excessive pressure required to open doors.
Stairs	Open steps or steps higher than seven inches. Handrails too high or too low to be used. Improperly secured handrails. Handrails difficult to grasp due to size and shape or not extending beyond steps.

Figure 9-1. Architectural barriers in homes and barriers outside the home or apartment

Elevators	Entrance too narrow to permit wheelchair. Floor level out of alignment with building floor. Cab too small for wheelchair. Controls out of reach. Controls not adapted for use by the blind. Lack of audible arrival signal which tells blind direction of elevator movement.
Floors	Floors between different parts of buildings not level and connected by steps. Slippery floors or deep-pile carpeting.

Source: Adapted from Kliment (1975)

Figure 9-1. Architectural barriers in homes and barriers outside the home or apartment (continued)

The extent of the architectural barriers problem in private and public housing was also reflected in the Urban Institute's survey of rehabilitation service-providers. When asked to indicate whether certain services would effectively assist the severely handicapped to achieve independent living, 96 percent agreed that home modifications would be important. Only 5 percent, however, were actively involved in providing such services. Eighty-nine percent of the service-providers agreed that a lack of barrier-free housing was a "significant problem for the severely handicapped" (The Urban Institute, 1975).

PROBLEMS ASSOCIATED WITH INSTITUTIONAL ENVIRONMENTS

Rehabilitation and chronic disease hospitals, psychiatric hospitals, and state instituions for the mentally retarded have represented a major model of residential service, but have recently come under increasing attack. There is no question that the rehabilitation hospital is needed, but there is concern about the effects of sensory, motor, and social deprivation associated with long-term hospitalization (see McDaniel, 1976). Criticism of large institutions for the mentally ill and mentally retarded has been more strident. There has been a large amount of literature suggesting the negative effects of institutionalization. Sheer size of the facility has been identified as one factor, with the literature pointing to more adequate care in smaller facilities (Balla, 1976). More important perhaps in terms of its effects on residents is the low quality of services provided in many large institutions. Evidence points to the beneficial effects of interaction between staff and residents, special programs, and a good physical environment, when staffing is adequate and these components can be optimized in large institutions (Scheerenberger, 1976). Another factor which has been identified as a problem is the isolation of large residential facilities, a factor which makes it difficult for residents to learn skills which would permit them to move to the community. Rosen and Bruno (1971) found that approximately one-half of the public and private facilities for the retarded were located at a distance greater than 25 miles from the largest city they serve. Less than one-fourth were within the largest community served.

Rosen and Burno (1971) assessed the extent to which "dehumanizing conditions" exist in public and private residential facilities for the mentally retarded. Four percent of the public residential facility respondents indicated that conditions were "intolerable," 44 percent said that living conditions were worse than that found in most living situations; 34 percent indicated that dehumanizing conditions were comparable to most community situations; and three percent indicated that, while such conditions were not absent, they were less prevalent than in most community situations. No private facilities reported intolerable dehumanizing conditions. Fifty-five percent indicated good living conditions, and 45 percent reported dehumanizing conditions in varying degrees. What is most alarming about these opinions is that they were provided by the institutions themselves.

Finally, institutions are criticized as being costly, particularly for less severely handicapped persons who do not need the full range of services offered. For example, average expenditures per patient day in state and county hospitals for the mentally ill were around $21 in 1972 (Taube & Redick, 1975), and have risen sharply. Rutman and Egan (1975) report per diem state hospital rates of $31 in 1974. Other institutional cost estimates are similar or higher, and, in general, compare unfavorably with community residential options.

INSTITUTIONAL REFORM

Although there is a trend toward alternatives to institutions, large institutions are unlikely to disappear. Thus, one alternative in residential programming is institutional reform. According to Scheerenberger (1976), institutions for the mentally retarded are already changing along the following lines: (1) old facilities are reducing the number of residents they serve; (2) new facilities are being built smaller; (3) services are being provided by outreach to the community; (4) residents are being prepared for the community and participating in community programs; and (5) parents are more involved in programming. These and other trends cited by Scheerenberger suggest that institutions of the future will serve only those in serious need of structured long-term placement and will be more concerned with preventing the need for long-term placement by establishing linkages with the community.

Grunewald (1971), for example, has described a Swedish hospital which developed a specialized unit for the severely mentally retarded. Patients are divided into small groups, and intensive training as well as medical care is provided in a separate wing of the hospital. The advantages of smaller groups include fewer opportunities for the occurrence of disturbing events, the possibility of selecting patients for suitable groups, and more opportunities for staff guidance and habilitation of the patients.

Regional Residential Centers represent another aspect of institutional reform. Though they have largely been duplications of large institutions, they have the advantages of being community-based and smaller in size (Helsel, 1965). While regional centers have reduced the problem of physical isolation which characterizes institutions or state schools, they retain the single-campus, multi-purpose character of the large institution (Fritz, Wolfensberger, & Knowlton, 1971).

Most important for our present purposes are current institutional attempts to facilitate deinstitutionalization through institutional reform. The Rosen and Callan (1973) survey of public residential care facilities for the mentally retarded found that 26 percent of the responding facilities were operating "quarter-way" houses on the institutional grounds. The number of such facilities per institution ranged from one to six, with a mean of one. Respondents indicated that, in most programs, the quarter-way house had facilitated the transition to community living. Moreover, 20 percent of the respondents claimed to operate halfway house facilities external to the institution. Number of halfway houses ranged from one to seven per residential facility, with a mean of three.

There are several building design options which may facilitate the establishment of deinstitutionalization training programs and change the face of institutions. Quarter-way houses may consist of new construction of cottage-type modular units, renovation of old wards, pre-fabricated sectional housing, or factory-built transitional facilities (mobile homes) (Arthur Bolton Associates, 1973; Sokoloff-Hamilton-Bennett, 1973). Of these alternatives, mobile homes and pre-fabricated sectional housing appear to have the most desirable characteristics.

Advantages include low construction costs. The construction per resident for sectional housing has been estimated at $6,000, compared to the standard institutional costs for the retarded of $24,000 to $39,000 per resident. Short development time is another advantage (Sokoloff-Hamilton-Bennett, 1973).

It is likely that institutional environments will continue to undergo considerable change in the future, but there will be, at the same time, an increasing need for alternatives to them.

THE LEGISLATION AND POLICY CONTEXT

Future housing and residential programming policies will be affected by legislation--federal, state, and local. At present, the legislative context is confusing and in rapid flux. To what extent can desired concepts be implemented in this context?

In 1960, HEW released figures which showed that 30 million Americans had physical disabilities which "seriously limited their full and free use of the environment" (United States Department of Housing and Urban Development, 1975). At this time, most of these individuals were found to be living in housing which did not permit independent living unless it had been specially renovated to remove architectural barriers. Additionally, restrictions on the use of outdoor space and public transportation existed due to the existence of architectural barriers. The report that HEW released had considerable impact in gathering support for relevant legislation (HUD, 1975).

THE HOUSING ACT OF 1964

The Housing Act of 1964 was the first piece of federal legislation which dealt with the problems exposed by the HEW report. This legislation provided eligibility for physically disabled persons and some mentally retarded persons on an equal basis with the elderly in federally-assisted housing programs. Under the Act, HUD issued the requirement that 10 percent of all units which were in housing projects designed for the elderly and which had received financial assistance from or were insured by HUD must be accessible to the physically disabled (HUD, 1975). The Act also included anti-discriminatory regulations, but some states have waiver clauses that may be invoked to exclude certain tenants. For example, California has a regulation by which a landlord is authorized to exclude a blind person who uses a seeing eye dog as a mobility aid if other tenants are not allowed to have dogs.

THE ANSI STANDARD FOR BARRIER-FREE ENVIRONMENTS

The ANSI Standard was published in 1961 by the American National Standards Institute, Inc. and was developed in response to a 1959 conference of interested groups. The President's Committee on Employment of the Handicapped, along with the National Easter Seal Society for Crippled Children and Adults, sponsored the two-year project. This

Standard has guided most legislation and regulations concerning architectural barriers currently in effect. Intended to apply to all buildings used by the public, it specifies certain requirements which are to be met (e.g., doorways must be of sufficient width to accommodate a person in a wheelchair or a person who uses crutches) and certain handicapping conditions (blindness, deafness, semi- and non-ambulatory disabilities associated with incoordination and old age). The standard specifies minimum conditions of parking, site grading, building design, dimensions of washrooms, and other features, as well as the design and location of signals and controls (Kliment, 1975).

Since its inception, the Standard has lost much of its intended usefulness. There is growing sentiment and realization that the Standard is grossly incomplete in its present form because it specifies only minimal, not optimal, standards (Kliment, 1975). The Standard has also been criticized because, while defining categories of accessibility, it lacks specificity in certain important areas. For example, the Standard addresses itself to all buildings and facilities "used by the public," but does not specify in further detail which facilities are to be covered or to what extent its specifications should be followed. The Standard does not cover residential housing, and provisions covering such public or semi-public accommodations as hotels, motels, and college dormitories are also equivocal (General Accounting Office, 1976).

HUD has recently contracted for revision and expansion of the ANSI Standard. A great deal of work is based upon interpretations of barrier-free residential standards now in use in Europe (Greenstein, et. al., 1976). The new Standard will include specifications for both single and multi-unit residential housing, mobile homes, and their related exterior spaces. It is expected to have considerable impact on federal, state and local legislation. Incorporation of the new Standard into existing legislation and codes should be relatively simple, since most federal and state laws and regulations, as well as local codes, already contain the Standard by reference. The new Standard will also be included in HUD's proposed Federal Housing Administration for FHA-insured housing (Kliment, 1975).

THE ARCHITECTURAL BARRIERS ACT OF 1968

The Architectural Barriers Act of 1968 (P.L. 90-480), while having had considerable impact on the elimination of certain architectural barriers, is limited in scope. The Act applied only to buildings "constructed in whole or in part with Federal funds." Its influence was further limited in that the ANSI Standard was chosen as the standard of compliance (Kliment, 1975).

HUD's responsibility for eliminating architectural barriers in residential structures is contained in the Architectural Barriers Act. However, since the Act utilizes the ANSI Standard, which does not explicitly cover residential structures, the law has had limited impact on the elimination of architectural barriers in HUD-funded residential facilities and homes. The utility of the ANSI Standard, even when scrupulously followed is questionable with respect to defining accessibility of residential structures. The Standard, for example, does not include specifications for kitchens, private living space, or washrooms (General Accounting Office, 1975).

Another major deficiency of the Architectural Barriers Act with respect to housing needs is that the definition of "building" excludes privately owned residential structures, including privately owned buildings leased to the government for public housing (General Accounting Office, 1975).

Overall, the Architectural Barriers Act and the ANSI Standard have not been effective in insuring accessibility in design and construction. However, the problem can only be partially ascribed to the language and limitations of the Act and the Standard. Implementation of the Act was left up to the discretion of agencies concerned with particular projects. While they are authorized to prescribe whatever standards are necessary, within the framwork of the ANSI Standard, to insure accessibility by handicapped persons, the agencies have also been free to waive the Standard on a case-by-case basis. Surveys and investigations to assure compliance with the Standard are also undertaken as the agencies deem necessary, and no formal enforcement mechanism was included in the Act (General Accounting Office, 1975).

The Rehabilitation Act of 1973 was intended to make up for this lack of an enforcement mechanism through the creation of the Architectural and Transportation Barriers Compliance Board. This board has the power to "conduct investigations, hold public hearings, and issue orders as necessary to insure compliance" with the Architectural Barriers Act. It is currently the only agency involved in insuring that the standards of the Act are met (Kliment, 1975).

THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974

This Act was signed into law as P.L. 93-383 in 1974 and represents the first legislation which contains significant provisions for fostering alternative living arrangements for disabled persons. HUD, the agency which administers the federal government's housing finance programs, is responsible for the implementation of P.L. 93-383 (Ross, 1976). The primary focus of the law is to provide funds for projects promoting housing and general community development. Three sections of the law are specifically applicable to the handicapped. These include application and review requirements that must be met before a HUD grant will be conferred. No grant may be made unless accurate surveys of the condition of the existing housing stock in the community are conducted and assessment is made of the housing assistance needs of lower income persons, including the disabled and elderly. Another section specifically applicable to the handicapped concerns eligibility of housing programs for HUD assistance. Eligible programs may include special projects directed toward the removal of material and architectural barriers restricting mobility and accessibility to the elderly and handicapped (HUD, 1975). Section 8 of the Act establishes a HUD funded rent-subsidy program for lower income, elderly and disabled persons. According to Ross (1976), "the annaul plan and the mandated survey are the basic vehicles to be used to target federal funds on the housing needs of persons with a disability." With respect to architectural barriers, the impact of the law is limited since it does not require that buildings financed by HUD grants be subject to any particular standard of accessiblity. The Architectural Barriers Act does not apply to buildings constructed in accordance with P.L. 93-383, nor does the law contain any other government-required design or construction standards (General Accounting Office, 1975).

The Community Development Program does award funds to local governments (cities and counties) for the removal of architectural barriers which restrict the mobility of disabled persons. While this program is not a housing program per se, the removal of architectural barriers may be a prerequisite to or an accompaniment of a formal housing program for disabled persons (Ross, 1976).

Section 8, the rent subsidy program, offers great potential to handicapped persons with low incomes who have difficulty finding housing which is both accessible and inexpensive. The 1970 United States Census indicated that 52 percent of persons defined as disabled have incomes below $5,200 per year. Moreover, disabled individuals must spend a greater percentage of their incomes in the acquisition of services such as transportation, housekeeping, attendant care, and so forth (Reemes, 1974).

Pursuant to Section 8, HUD is authorized to pay the owner of rental property the difference between the contract rent and the amount of rent a family or individual pays. Under the Housing Assistance Plan, which is developed at the local level under the supervision of Local Housing Authorities, HUD pays the difference between rent, and not less than 15 percent and not more than 25 percent of a family's or individual's gross income (Ross, 1976).

Persons eligible to receive rent subsidies are low income families and disabled individuals and families with a disabled member whose incomes meet the HUD established criteria. A disabled person is eligible for rent subsidy if he or she is disabled as defined by the Social Security Act or the Developmental Disabilities Act; or has a disability which has been judged to be of a prolonged and indefinite duration, which significantly limits the capacity for independent living, and which would be alleviated to some extent by more suitable housing accommodations (United States Code, Title 42, Section 1437a; reported by Ross, 1976).

The types of housing options communities may utilize under the rent subsidy program are new construction, purchase, or leasing of existing buildings. Housing which does not qualify for the program includes new or substantially rehabilitated housing of 12 or fewer units, housing located in federally assisted new communities, and state-financed housing (Ross, 1976).

The action and initiative of local governments (county and city) is critical to the full utilization of Section 8, but as Ross points out, requests for housing for disabled persons must be "organized and well-substantiated" before communities can be expected to respond to their needs (Ross, 1976).

Other sources of funding made available by the Act concern the development of congregate housing, start up loans to help build or rehabilitate housing, direct housing construction loans to non-profit developers of housing programs for the elderly and handicapped, insured mortgages, and rental assistance programs (Ross, 1976).

One of the most important characteristics of the Act is that it allows local governments more flexibility and independence with regard to the setting of community priorities and the control of funds. P.L. 93-383 makes a number of funding mechanisms available to communities, and the type of housing constructed will be largely determined by the type of financing and its corresponding rules and regulations (Ross, 1976).

While P.L. 93-383 for the first time clearly establishes the eligibility of disabled persons for federal housing benefits, it does not affirm the rights of the disabled to housing, nor does it constitute a national housing policy for the handicapped. Advocates at the community level may utilize this eligibility in developing community-based arrangements for disabled persons, but, as Ross (1976) has pointed out, advocacy without sponsorship does little to stimulate housing production.

The effectiveness of the Act is further limited by its lack of an enforcement mechanism. According to Ross (1976),

> P.L. 93-383 is permissible, not mandated, legislation as it relates to persons with disabilities. The Act specifically permits, authorizes, and allows for the creation of the means and mechanisms to serve the disabled, but it does not require that housing needs of the disabled be met.

Thus the Act merely broadens potential opportunities for the disabled (Ross, 1976).

THE ESTABLISHMENT OF COMMUNITY MENTAL HEALTH AND MENTAL RETARDATION CENTERS

Legislation was passed in 1963 which established funding for the construction of Community Mental Health and Mental

Retardation Centers (CMHMR). Subsequent legislation has provided funding for staffing. According to the original legislation, CMHMRs are required to provide five types of services: inpatient care, outpatient care, partial hospitalization, counseling and educational programs, and emergency services. Later legislation has expanded the types of services to be provided by the Centers to include specialized services to children and the elderly, follow-up care for former hospital patients, and transitional halfway house programs (Rutman, 1976). This legislation, along with Developmental Disabilities legislation, is important in enabling deinstitutionalization to proceed.

STATE ACTION

As of 1975, all 50 states and the District of Columbia had statutory requirements or building codes directed toward the removal of architectural barriers in publicly owned and/or used buildings (General Accounting Office, 1975). Of all the states, however, Massachusetts has perhaps been the most progressive in the enactment of handicapped-related legislation. One law was designed specifically to establish housing opportunities for the handicapped (both physically and mentally) by making single handicapped persons of any age of families in which one or more persons is handicapped eligible for the State's low income public housing programs for the elderly. The law also stipulates that handicapped persons receive priority in placement in at least 5 percent of all low income units constructed since 1971. A second law, passed in 1974, authorized the Massachusetts Housing Finance Agency to develop housing for the handicapped and created a Bureau of Housing for the Handicapped within the State's Department of Community Affairs (HUD, 1975).

The Massachusetts legislature has also established an Architectural Barriers Board which writes and enforces its own regulations for new construction. These regulations are incorporated into the Massachusetts State Building Code. The Code applies to new as well as existing structures which are being substantially renovated or enlarged (Kliment, 1975).

The Board's jurisdiction is quite broad and supersedes all local provisions. Structures which are covered by its regulations include all public buildings (defined as buildings constructed with public funds and open to public use), buildings of any public educational institutions, and privately financed buildings that are open to and used by the public. With regard to the latter type of structure, the Board's regulations specify that all hotels, motels, and apartments of 20 or more units must have at least 5 percent of their units accessible to and useable by the physically handicapped (Kliment, 1975).

Other states which have architectural barriers laws or codes accompanied by strong enforcement provisions include North Carolina, Iowa, Illinois, New York and California.

Several other states are preparing to strengthen existing provisions (Kliment, 1975).

Some states are utilizing tax credit incentives to encourage the development of barrier free buildings and housing by private developers. North Carolina, for example, has a law which provides an income tax credit for the removal or omission of barriers. Tax credit incentives are especially effective in the removal of architectural barriers in private existing buildings which are outside the jurisdiction of barrier-free laws (Kliment, 1975).

LOCAL BUILDING CODES AND ORDINANCES

In most cases, local codes and ordinances will determine the final structure and design of a building. Regulations which affect building construction range from federal requirements, such as the Federal Property Regulations, to state-established standards and guidelines such as those recently created in Massachusetts. Other codes and ordinances which influence building construction include zoning requirements, state and local health codes, fire-safety codes, plumbing and electrical codes, and insurance company regulations (Kliment, 1975).

While specialized building codes vary considerably from locality to locality and state to state, there is normally a basic, more general code which determines overall design and construction criteria for buildings in a given community.

The basic code, however, is always linked to specialized adjunct codes which are often advocated by interested fund-granting or public lending agencies (Kliment, 1975).

Kliment (1975) indicates that cities usually adopt one of three approaches with regard to basic building codes: (1) they may devise and enforce their own code; (2) they may adopt a state code; or (3) they may adopt one of the national codes. Given the variety of codes and ordinances as well as the flexibility of approaches, it is highly unlikely that any two cities in the United States utilize the same set of standards and specifications in building construction (Kliment, 1975).

New laws pertaining to housing reflect greater national concern with the handicapped. However, the laws do not go as far as many consumers and professionals would like toward enabling the development of a coherent national solution to housing and residential problems.

CONCEPTS AND A CONTINUUM OF ALTERNATIVES

The trend toward deinstitutionalization and the development of community residential models has been accompanied by key words which describe philosophical orientations. One concept, applied to both the physically and mentally handicapped, is normalization. This concept means making available to the handicapped the same kinds of physical and social environments and experiences as are made available to most people, or in Wolfensberger's (1972) terms, "utilization of means which are as culturally normative as possible in order to establish and/or maintain personal behaviors and characteristics which are as culturally normative as possible." An outgrowth of dissatisfaction with institutions, this concept implies that residential alternatives should be physically homelike and integrated into the community, and, in terms of social support, environments which respect and foster individual freedoms of property, privacy, communication, and so on.

A related concept is that of the least restrictive alternative, a concept which was established as a right for the mentally retarded in the case of Wyatt v. Stickney, 1972 and for the mentally ill in the case of Dixon, et. al., v. Weinberger, et. al., 1974. Essentially, it means that a handicapped person should not be confined in a highly structured institution if his or her capabilities would permit residence in a more normalized and less structured environment which might better foster independence.

In the welfare field, the term which has evolved for new alternatives is long-term care, which entails development of a range of alternatives to supplement the institution and nursing home models. Harper (1975) described long-term care activities in the following manner:

> Long-term care activities refer to those activities directed at the total population in need of both institutional and non-institutional care, with special emphasis on improving the quality of care and providing viable alternatives in institutional care.

This pattern of services must be flexible enough to provide individualized services. Often individuals in need of long-term care, such as the cerebral palsied or more severely retarded, are inappropriately placed in facilities which are only custodial in function (Helsel, 1972). Long-term care should not be based on the medical or custodial model. According to Helsel new options in the area of long-term care should be based on the health model which coordinates care with a wide range of community services. Service delivery should be multidisciplinary and multi-agency in nature, and not be the sole responsibility of a single facility or profession. The developmental model should also be used to provide a range of alternatives from natural home to specialized residential centers appropriate to the individuals needs (Helsel, 1972).

In the architectural barriers literature, housing alternatives are classified as accessible, adaptive, and specialized, and range from slight modification of standard housing to the design of special environments which are optimally suited to the functioning of the handicapped (Jeffrey, 1973).

The overriding concern in all these conceptualizations is the development of a full continuum of alternatives. Since all handicapped individuals are not handicapped to the same extent, it is necessary to differentiate among varying levels of capacity for independent functioning and self-care in designing housing and residential programs (Melia, 1975). A continuum of housing options is required, not only to satisfy individual needs, preferences and life styles, but to allow for the non-static nature of many disabilities. For example, a permanent, fixed impairment has a less limiting effect on the individual's functional capacity as new skills are acquired (Jeffrey, 1973). The individual with spinal cord injury may by necessity need to live at first in a rehabilitation hospital or another restrictive care setting where he or she can learn new skills necessary to cope with mobility impairments and decreased functional capacity. After attaining a certain level of independent functioning, however, the individual will no longer need a maximally supportive environment. It is essential that alternatives other than nursing homes and restrictive environments be made available (Fay, 1974).

On the other hand, an individual with a progressive impairment, such as multiple sclerosis or diabetes, may initially require only minimal amounts of care and supervision. As his condition worsens, however, the individual will most likely need to move on to a setting which provides more support (Jeffrey, 1973).

Several writers have attempted to portray a continuum of alternatives based on resident need. A widely cited scale based on extent of mobility limitation and adaptibility to differing environments is depicted in Table 9-6.

Rutman (1976) has also calssified various residential settings (see Table 9-7) according to extent of functional capacity displayed by potential residents (primarily persons with psychological disorders).

TABLE 9-6
CLASSIFICATION OF HOUSING FOR THE PHYSICALLY HANDICAPPED

Mobility Limitation	Level of Functioning	Housing Considerations
Bedridden	Constant care is required	Institutionalization or special services when cared for at home (nursing home, hospital, other long-term care facilities)
Wheelchair	Some personal attention and care may be required	Live in own home or apartment if renovated or incorporates special design features. Depending on the extent of the mobility limitation, attendant care may be required.
	Capable of independence if architectural barriers are removed	Normal housing context with special adaptations and full range of out-of-house services
Semi-ambulant	Personal care may be needed	Residential group home is suitable or independent living with occasional attendant care.
	Complete independence possible	Normal range of housing options which incorporate special features
Ambulant	Usually complete independence	Normal range of housing options with possible personal care services. Residential group homes or halfway houses as transitional setting between hospital and home.
	Very few limitations	Normal range of housing with special design features desirable.

Source: Central Mortgage and Housing Corporation, 1973

TABLE 9-7
CLASSIFICATION OF RESIDENTIAL PROGRAMS FOR THE MENTALLY HANDICAPPED

Functional Level	Amount of Supervision	Type of Facility
Lowest	Needs regular supervision	Nursing homes; long-term care facilities hospitals
Limited	Needs on-going supervision	Quarter-way houses; individual and group foster homes; boarding homes; domiciliary care lodges
Partial	Needs moderate-little supervision	Halfway house; three-quarter way house; individual and group foster homes; lodges
Nearly Independent	Minimal supervision	Three-quarter-way house; supervised apartment program; cooperative apartment program.

Source: Adapted from Rutman, 1976

Both of these classification schemes are based on degree of independence displayed by residents: one simply emphasizes independence in the areas of mobility and self-care, while the other stresses independence in the area of decision-making of need for supervision. The concept of a sequential continuum should be borne in mind as specific models are assessed.

SPECIFIC MODELS AND THEIR STATUSES

This section describes several models of housing and residential programming: barrier free design and public housing, nursing homes, halfway houses, group homes, foster or adoptive homes, and independent living arrangements or apartment models. These models are not always alternatives to one another, as they were often developed to meet the special needs of a subgroup of the handicapped population. Many are alternatives to institutional models. Degrees of both physical and social-environmental support have been identified--as reflected in architectural design, medical care, supervision, and training, and as associated with degree of resident independence--as a way of classifying housing and residential programs. Now other dimensions can be added to the classification scheme:

1. Physical vs. Social Support--extent of relative emphasis on physical and social needs.
2. Low vs. High Structure--extent to which support (physical and/or social) is provided.
3. Integration vs. Segregation--extent to which the facility is integrated physically and the residents are integrated socially in the mainstream of the community.
4. Transitional vs. Long-term--the extent to which the objective is movement to a more independent setting or provision of a stable and permanent residence.

5. Normalized vs. Nonnormalized--the extent to which the alternative is physically and socially similar to residences of the mainstream culture.
6. Individuals vs. Group--extent to which the living unit is congregate or based on a single-family concept.

In order to provide an overview of the differences among models, Figure 9-2 was constructed to tentatively classify alternative models in terms of the dimensions of analysis. Rather than placing models along the entire continuum, they were grouped at three points along each continuum because it is difficult to make fine distinctions when each major model has many variations. Generally, institutions and nursing homes provide both physical and social support and are characterized by high structure, segregation, a long-term care focus, a nonnormalized environment, and congregate or group living. Barrier-free construction and independent living arrangements and apartment programs, are at the opposite poles of these same continua, although they are like nursing homes and institutions in the sense that they are intended primarily as long-term residential options. Foster homes, group homes, and halfway houses often fall between the extremes of the dimensions, although their major purpose is to provide social support in a setting approximating a normal environment.

Physical Support	BARRIER	ILA NURSING INST	HWH FOSTER GROUP	Social Support
Low Structure	BARRIER ILA	HWH FOSTER GROUP	NURSING INST	High Structure
Integration	ILA BARRIER FOSTER GROUP	HWH	NURSING INST	Segregation
Transitional	HWH	ILA FOSTER GROUP	NURSING BARRIER INST	Long-term
Normalized	ILA BARRIER FOSTER GROUP	HWH	NURSING INST	Nonnormalized
Individual	BARRIER ILA	FOSTER GROUP	INST NURSING HWH	Group

Abbreviations Used:

INST = Institution
NURSING = Nursing Home
HWH = Halfway House
GROUP = Group Home
FOSTER = Foster or adoptive home
BARRIER = Barrier-free construction in housing*
ILA = Independent living arrangements and apartments

*In practice, barrier-free units within model HUD housing projects for the elderly and handicapped to not achieve the ideal with respect to integration in the community.

Figure 9-2. Location of housing and residential alternatives on conceptual dimensions

BARRIER-FREE DESIGN AND PUBLIC HOUSING

From an architectural point of view, housing for the disabled falls into three categories: accessible, adaptive, and specialized. These categories apply to both individual and group residences, and to single as well as multi-unit housing. Accessible housing refers to housing with minimal adaptations such as entrance ramps and wider doorways (Jeffrey, 1975). Adaptive housing is housing designed for anyone--not just the able or disabled--who might require different degrees of environmental modification and support services. This type of design allows for the removal or inclusion of special features as needed, and, consequently, the housing unit can be adapted to meet the needs--permanent or temporary--of specific occupants. Adaptive housing encompasses the principle of normalization in that it deviates from traditional housing only insofar as the resident's disability necessitates (Roos, 1974). Specialized housing refers to the design and construction of units for individual persons or groups of persons with very specialized housing needs. Adaptive housing for the physically impaired might include such special features as kitchens with adjustable counter-tops, wall ovens, and larger and modified bathrooms. For those individuals who have sensory impairments, housing needs are less extensive and critical than those of individuals with mobility limitations. For example, adaptive housing for the deaf or hearing-impaired individual would involve the inclusion of a visual alarm and signalling system and would not necessitate further modification. Other adaptations would be needed for blind occupants (Michel, 1972).

To make the concept of barrier-free design more concrete, the following example of kitchen design is offered. The design was developed by the Armco Student Design Program of Armco Steel (1974):

1. Drawers and shelves are included in all storage-type units, and are on rollers to facilitate opening and closing.
2. Handles which consist of a bar formed like an "L" are provided to allow both vertical and horizontal grip.
3. All appliances have vertical side controls for easy operation.
4. Oven and range are set back 10 inches from the counter allowing a resting place for cookware during food preparation.
5. Oven door opens vertically, as does the dishwasher.
6. Cabinets beneath the sink are set well back to allow wheelchair access to the sink.
7. Faucets are operated with horizontal slide controls and are placed well forward within easy reach.
8. Counter lip of sink is designed to be used as a handrail if needed.

The mentally disabled can also benefit from adaptations of the physical environment. Recent developments in the field of "behavioral architecture" have many implications for the design of special facilities for the mentally disabled, and may in fact contribute to therapeutic ends. Robert Sommer (1969) noted that a remodeled ward, while attractive, produced little interaction among residents because chairs were lined against the walls, making it difficult to orient oneself toward another person during conversation. By introducing small tables as an alternative, he produced measureable increases in both brief and sustained interactions, as well as more time spent reading and participating in crafts. Cheek, Maxwell, & Weisman (1971) studied the effect in a state hospital ward of replacing tiles by carpeting. Carpeting was associated with less noise, less irritability among patients, more satisfaction that the environment was homelike, and greater efforts to be neat and ordered. Architect Raymond Studer (1966) has gone so far as to argue for what he called "servo-environmental systems," which are not only based on behavioral principles but which respond to changes in behavioral patterns rather than having a single and static form. Some of the special therapy rooms in hospitals are examples of environments which closely fit patient needs through manipulation of such variables as barometric pressure, oxygen content, humidity, and so on.

STATUS OF COMPLIANCE WITH LAWS AGAINST ARCHITECTURAL BARRIERS

The National Commission on Architectural Barriers (NCAB) reported in 1967 that while almost all states have laws or statutes directed toward the removal of barriers, most are ineffective. Most of the laws are vague and apply only to certain types of buildings--usually new, publicly owned structures. Only three states have laws which apply to privately constructed buildings (HEW, 1968).

In the early 1960's, the Minnesota Society for Crippled Children and Adults surveyed 483 public buildings in order to assess the extent and type of various architectural barriers (reported in The Urban Institute, 1975). The survey concluded that "architectural barriers are so self-evident that statistical documentation of the problem is for the most part superfluous" (The Urban Institute, 1975).

Another study--conducted in 1974 by the Easter Seal Society for Crippled Children and Adults of Iowa, Inc., the Iowa Governor's Committee on Employment, and the Iowa Chapter of the American Institute of Architects--surveyed recently constructed buildings financed at least in part with federal funds to ascertain the effectiveness of the Architectural Barriers Act of 1968.

Thirty-four buildings constructed since 1968 with federal assistance were surveyed by a team consisting of an architect, a person in a wheelchair, and a recorder. Results showed that some of the ANSI specifications were nearly always complied with (minimum door widths, for example). Substantial violations, however, were noted in many areas. Nearly 70 percent of the buildings surveyed lacked parking provisions for the handicapped. About 20 percent were deficient in that they lacked level entranceways and walkways. While nearly all buildings met the minimum requirement of having at least one doorway accessible to the wheelchair bound, nearly 25 percent of the stairways were not in compliance with the ANSI Standard. Over one-third of the buildings lacked accessible drinking fountains, and most coin operated telephones were too high for persons in wheelchairs to reach. No buildings had telephones equipped for persons with hearing impairments. More than one-half of the elevators had controls too high for persons in wheelchairs, and most did not have raised or indented letters on the controls which make them useable by the blind and visually impaired. While most of the buildings had audible alarm systems, three-fourths did not have visual systems. Most facilities had the appropriate number of restrooms designed for the handicapped, but due to the existence of other barriers, they were often difficult to access (The Easter Seal Society for Crippled Children, & Adults of Iowa, Inc., et. al., 1974).

STATUS OF HUD HOUSING PROJECTS

More germane to the housing needs of the handicapped is the status of architecture in public housing for the elderly and disabled. The Massachusetts Association of Paraplegics (1970) study of housing preferences of disabled persons produced evidence that a substantial number of disabled persons are in need of accessible housing. When respondents were asked if they would be "likely to move into housing especially designed for the handicapped," 39 percent (of approximately 1,000 sampled) responded affirmatively. An additional 30 percent indicated that they would be "somewhat likely to move" to an appropriate housing arrangement. Over half of the individuals who could be considered as potential movers had mobility limitations requiring the use of wheelchairs and 20 percent used crutches or leg braces. This group of respondents can be characterized as fairly young (30-39 years of age), mostly unmarried, and moderately well-educated. Income data obtained in the survey suggests that approximately half of the potential movers would need units at or below public housing costs levels (Fishman, 1971).

The Housing Act of 1964, in combination with subsequent pieces of legislation (e.g., The Architectural Barriers Act of 1968, The Federal Property Regulations), has been largely responsible for the funding of 452,000 subsidized and 49,000 unsubsidized dwelling units of housing for the elderly, at least 10 percent of which are accessible by the physically disabled (HUD, 1975). However, only eight projects (totalling approximately 1,000 units) have been designed and constructed specifically for the disabled (Ross, 1976). Based on these figures, the number of HUD sponsored dwelling units for the physically disabled totals at least 51,100. Table 9-8 shows a comparison of the eight HUD funded projects which have been designed and constructed for disabled occupants.

TABLE 9-8
HUD FUNDED HOUSING PROJECTS FOR THE HANDICAPPED

Name/Location	Sponsor	Year Opened	Cost	Size/Group	Persons Served
Vistula Manor Toledo, Ohio	Toledo Metropolitan Housing Authority	1967	$3,800,943	164	Handicapped and Elderly
Pilgrim Tower Los Angeles	Pilgrim Lutheran Church of the Deaf	1968	1,723,000	112	Deaf and Hard of Hearing Elderly
Center Park Apts	Seattle Housing Authority	1969	2,596,421	150	Handicapped and Elderly
Walter B Roberts Manor Omaha, Nebraska	Omaha Association for the Blind	1969	422,900	42	Blind and partially sighted elderly
Highland Heights Fall River, Mass.	Fall Riber Housing Authority	1970	2,942,204	208	Handicapped and elderly
New Horizons Fargo, N. Dakota	Fargo Housing Authority	1972	1,947,874	100	Handicapped
Independence Hall Houston, Texas	Goodwill Industries	1973	3,197,800	292	Handicapped and elderly
Creative Living Columbus, Ohio	Creative Living, Inc.	1974	333,100	18	Quadri- and paraplegics

Source: Architectural & Transportation Barries Compliance Board, Volume I, 1975

While not a subsidy program per se, such federally sponsored low-income housing programs for the handicapped and elderly offer accessible housing at low cost. Rents charged in such projects are limited to 25 percent of a family's income and are used to pay operating expenses only. The major cost--that of building--is provided by the federal government (Fishman, 1971).

While the number of HUD funded units currently being occupied by disabled persons is not available, there are indications that occupancy rate is below expectations. Half of the units of the Vistula Manor project, for example, were originally designed for occupancy by handicapped individuals. At the time of its opening, only 10 percent of the units were occupied by handicapped persons, and currently approximately 30 percent of the units are. This low occupancy rate, however, is partially attributable to the lack of a number of specialized features necessary to make the complex fully accessible and useable (Architectural and Transportation Barriers Compliance Board, Volume I, 1975).

While HUD has developed design specifications for public housing in general, these standards are often circumvented. Architectural laws do not necessarily apply to all housing or structures built by public agencies. Housing built by Local Housing Authorities is sometimes not considered for public use and, therefore, does not fall under the jurisdiction of many laws. In addition, the relevant HUD directive is itself very limited and vague (Fishman, 1971).

> Fixtures in bathrooms of at least 10 percent of the living units of each type...shall be arranged and space provided to permit access and use by a person in a wheelchair (reported by Fishman, 1971).

HUD also requires that public areas be accessible, but no special design features are mandated. Also, these standards are intended to apply only to facilities which are to be occupied by the handicapped and/or elderly, which have an elevator, and which consist of 25 or more units in a single structure. Obviously, these limitations exclude many public housing units (Fishman, 1971).

NURSING HOMES

As described by Rutman (1976), nursing homes are facilities for acutely or chronically ill persons requiring attention by a medically trained staff. Services include execution of treatment plans and administration of medication. Skilled nursing home settings serve those individuals not needing hospitalization but in need of skilled nursing care. Intermediate nursing care facilities serve persons not needing either hospital or skilled nursing care but requiring limited care. These facilities are the most promising option for many handicapped persons because they cost less and are less restrictive.

The use of nursing homes as alternatives to other types of institutional placements is one of the most controversial of all housing options. Deinstitutionalization of the mentally ill and the mentally retarded has been influenced by state decisions to be relieved of the high long-term costs of caring for such individuals by transferring them to federally supported local programs. Community nursing homes, which have traditionally housed only the elderly, are among the institutions being used to care for the chronically mentally ill, more severely retarded, physically disabled, and a variety of other individuals with disabling conditions (Reichert, 1975).

STATUS

As of 1974, there were 16,000 nursing homes in the United States which had some type of certification. They served approximately 1,098,000 residents. It has been estimated that over 1.5 million handicapped persons live permanently in personal care or domiciliary institutions, including nursing homes (Noble, undated).

Presently, there is a lack of congruence between patient needs and type of care setting in many cases. Estimates claim that as much as 15 percent of the nursing home population does not require institutional care (Noble, undated). Other estimates suggest that approximately 800,000 more beds are needed to provide adequate care for individuals in need of long-term care (Donald Mills, Chief, National Health Enterprises, 1975, reported in Santiestevan, 1975). However, the latter estimate is based on a broader model of long-term care which includes more options than the traditional nursing home.

Much of the controversy revolves around the fact that accountability and responsibility in the nursing home industry have not been well-defined. Santiestevan (1975) has stated that only 7 percent of the nursing home beds in the United States are in facilities accredited by the Joint Commission on Accreditation of Hospitals. Of the 7,318 certified skilled nursing homes in the United States, more than half fail to meet fire safety requirements.

Cutbacks in funding for state institutions means that increasing numbers of the elderly and chronically disabled will need to turn to other types of long-term care facilities. At present there is a shortage of appropriate community-based alternatives for individuals in need of long-term care other than nursing homes. Nursing home care has generally been satisfactory, but primarily where physical care alone is needed and rehabilitation and independence are secondary considerations (Helsel, 1965). Affiliates of the United Cerebral Palsy Association have been using nursing home placements for some years, and some have been able to secure funding from private sources to build their own nursing homes. Where programs are individualized and operate in conjunction with UCPA affiliates acting as advocates on behalf of the residents, placements have been satisfactory, and meaningful relationships have often developed between the elderly and young residents (Helsel, 1972). The UCPA Task Force, however, has recommended that the development of other alternatives for the cerebral palsied be given primary consideration.

Fishman (1971) has described two major drawbacks of nursing homes:

> First they are designed for care of the elderly person, chronically ill or convalescent. Second, nursing homes are staffed to provide more expensive care than is required by many young handicapped persons--the wrong care in a debilitating environment at a higher price than necessary. It is no wonder that so many groups are seeking another way.

HALFWAY HOUSES

While halfway houses have traditionally been used as transitional facilities in which former mental hospital residents may reside before returning to the community, they are not necessarily transitional in nature (Budson, 1973), nor do they exclusively serve the psychiatrically disabled or social delinquent. Rutman (1976) has described the halfway house in the following manner:

> ...community-based residential settings providing transitional living experiences to groups of from about 6-25 clients, with the average number of about 16. Predominantly non-profit in nature, they typically offer a variety of personal adjustment, counseling, and socialization experiences in addition to basic room and board servides. Most halfway houses are "free standing" organizations; some, however, are affilitated with other organizations such as rehabilitation centers,

> hospitals, mental health associations... Most, although not all, are established as transitional residencies under a maximum time limit which ranges from 3-12 months.

The major purpose of the halfway house is to provide an environment in which the ex-hospital or institutional resident can learn to participate in community life. Programs differ greatly according to intake criteria, length of stay, treatment goals, population served, services offered, quantity and quality of staff, location, and costs. Lacking uniform guidelines and few standards, programs have largely developed locally to meet local needs, and therefore, tend to reflect the conditions of particular locales and ideologies of founding and sponsoring bodies (Rutman, 1976).

While most halfway houses accept only one type of client, some serve a mixture of disabilities. The nature and purposes of facilities varies, but intake criteria concerning who may not be admitted are widely accepted: those generally excluded from participation in halfway house programs are sexual deviants, psychotics, the severely mentally retarded, and individuals who have a demonstrated history of violence (Lauber & Bangs, 1974).

Basically, the halfway house serves five basic groups: the homeless, the mistreated or abused child, the mentally ill, the mentally retarded, the criminal offender, and the alcoholic and drug abuser. The retarded sometimes live in halfway houses as permanent rather than transitional residents

(Lauber & Bangs, 1974). In that case, halfway house residency if often accompanied by sheltered workshop employment.

The extent to which support services are needed is largely dependent on the types of residents being served. All halfway houses provide at least room and board type services (Rutman, 1976). Residents are often encouraged to participate as much as possible in maintenance, housekeeping, cooking, and so forth. Many halfway houses provide rehabilitation services in-house. Such services include re-socialization, education, recreation, vocational training, and psychological counseling. Those which provide essentially only room and board and supervision rely on community resources to provide any needed support services (Rutman, 1976).

Halfway houses should be integrated within the community. While they should be separate from employment settings, halfway houses should be accessible to transportation and should not be located at excessive distances from the residents' work. If services are not offered in-house, the facility should be located in relatively close proximity to agencies providing support services (Rutman, 1976).

Problems may be encountered in the coordination of community services when many agencies are involved, but in many cases, these services simply do not exist. Community Mental Health Center legislation of 1975, however, is likely to alleviate this problem to some extent. Under this legislation, community re-socialization and vocational training services must be offered by all CMHMR Centers which receive federal support (Rutman, 1976).

As Rutman (1976) noted in his description of halfway houses, most are free-standing organizations. Many others, however, are associated with a parent institution, which may function as a service provider or operate in a supervisory capacity, and which may be ultimately accountable for program content and resident's safety and welfare. Many are linked with vocational rehabilitation, which provides funds for services received by clients. Most halfway facilities use either live-in or shift houseparents with support personnel (psychiatrists, psychologists) as needed.

CURRENT STATUS OF HALFWAY HOUSES

As a component of the mental health service delivery system, the halfway house is relatively new (Rutman, 1976). The growth of halfway house programs in the United States has been extremely rapid during the past several years. Glasscote, et. al. (1971) reports that in 1963 there were a total of 128 halfway house programs serving the mentally ill. As of 1971, 196 programs were identified (Glasscote, et. al., 1971). A 1973 survey conducted by the National Institute of Mental Health identifies 209 halfway house programs for the mentally ill and 597 serving primarily alcoholics (Cannon, 1975). The total number of such programs serving all types of disabilities is now estimated at between 1,200 and 1,300 (Rutman & Piasecki, 1976).

Cannon (1975) reports that as of October, 1973, there were 6,003 individuals residing in psychiatric halfway houses and 10,295 persons in alcoholism halfway houses. The breakdown by sex reveals that males were slightly overrepresented in psychiatric facilities, and accounted for the vast majority of persons residing in alcoholism halfway houses (88 percent).

Most of the facilities surveyed were small in size. The number of clients served per facility ranged from five to 300, but the median was 17 for the psychiatric facilities and 18 for those serving alcoholics. Transitional halfway houses (serving residents for less than six months) tended to be smaller than the more long-term ones (Cannon, 1975).

With respect to licensing procedures, there has been little consistency across states. The National Institute of Mental Health survey found that only 26 percent of the psychiatric halfway houses and 33 percent of the alcoholism halfway houses were actually licensed as halfway houses (Cannon, 1975). In fact, 29 percent of the psychiatric and 41 percent of the alcoholic halfway houses did not have a license of any kind. Others were licensed under other facility designations, which often were not congruent with the types of services provided.

Most of the halfway houses in the United States are nonprofit organizations (59 percent of the psychiatric and 90 percent of the alcoholism programs). Nonprofit organizations account, however, for only 35 percent of the total psychiatric halfway house beds available in the United States (Cannon, 1975).

It is difficult to evaluate halfway houses because those persons chosen for halfway house residency from institutional populations are often those most likely to succeed in the transition to greater independence. However, there is some evidence that halfway houses, hotels, and lodges do benefit clients. Fairweather, Ganders, Maynard, Cressler, & Bleck (1969) report positive effects of a community lodge on mental patients. Not only is it economical, but it has positive effects on independent functioning, particularly for those who have been hospitalized for long periods of time. Several researchers have found that halfway houses, by normalizing the treatment of persons with emotional problems, have had positive effects on behavior (Zax & Specter, 1974).

GROUP HOMES

Thomas (1973) has defined a group home as:

> ...a residential facility capable of serving, among others, a small number of mentally and/or physically handicapped individuals--up to a maximum of 20--who are able to participate in a variety of jobs, sheltered workshops, day care centers, educational facilities, and/or other community-based programs that are meaningful for their training, rehabilitation, and/or general well-being.

Group homes are usually of family size, though they may be larger as indicated above, and are usually specialized in terms of clientele, program goals, and administrative patterns. Like halfway houses, they vary greatly from locale to locale. Group homes may provide a place of permanent residence or may serve primarily as transitional facilities whose goal is to prepare residents for more independent life-styles (Wolfensberger, 1971). These homes are more oriented toward resident training than are foster homes, and are distinguishable from halfway houses because they are generally smaller and more family-like or normalized.

Group homes are currently being used for all types of disabled individuals of all ages, although they have been used most often for the developmentally disabled young adult. Most group homes, however, specialize in particular disabilities.

The group home is normally housed in an existing residential home and ideally in residential neighborhoods. Sometimes small apartment complexes may be rejuvenated in order to provide a home-like atmosphere for residents. Some group homes have been housed in prefabricated homes equipped with special features in order to accommodate client-residents with special needs (Wolfensberger, 1971).

The staff often consists of a set of houseparents who live in the home on a permanent basis. Many group homes utilize professional consultants such as doctors, dentists, nurses, social workers, and teachers. These services may be purchased individually or obtained through public and private programs (North Carolina Department of Human Resources, 1974).

Group homes may also employ assistants, cooks, and housekeepers, depending on size and residents' level of functional dependency (President's Committee on Mental Retardation, 1976).

STATUS OF GROUP HOMES

O'Connor's (1976) survey of community residential facilities for the developmentally disabled--the major work on the topic--found that 46 of the 50 states have at least one community residential facility. The total number identified was 611. In this study, community residential facilities were defined as having six or more residents, excluding smaller family and foster care homes, and probably including larger facilities built on the halfway house model. The recency and rapidity of the shift toward community residential facilities is indicated by O'Connor and Sitkei (1973), who reported that over 75 percent of the facilities for the developmentally disabled surveyed had existed for five years or less, while 46 percent had opened within the past two years of the survey (conducted in 1972).

With regard to size, O'Connor (1976) found that nearly half (44 percent) were small facilities (less than 10 residents). Nearly one-third housed between 11 and 20 residents, and one-fourth could be considered as large facilities (more than 21 residents). However, approximately one-half of the total residents in the study sample (N=3830) were living in the larger facilities, 27 percent were living in medium sized settings, and only 23 percent were living in small facilities.

The O'Connor study found that 89 percent of the residents served in the facilities surveyed were mentally retarded. One percent were nonretarded but otherwise developmentally disabled, and the remaining 10 percent had a variety of disorders, the majority considered emotional disturbance. While the resident population ranged in age from 2 to 70 years, 75 percent were between the ages of 17 and 34. The age distribution was essentially the same for males and females, who accounted for 60 and 40 percent of the resident population, respectively.

O'Connor reported that 75 percent of the facilities surveyed were located in cities of various sizes, which would be expected to provide community services. Regardless of location, most facilities were within walking distance of key community services and facilities and/or had access to public transportation. The general appearance of the interior of the homes was considered to be about average and neat, with homelike furnishings in fairly good condition. Over 69 percent of sample facilities could be categorized as physically normalized, but that over 50 percent of the residents were living in nonnormalized (generally large) facilities. This finding suggests that the primary goal of such programs, normalization, is being less than fully achieved--although it also suggests that the smaller group homes are more normalized than the larger halfway house facilities.

Bjaanes and Butler (1974) examined the behavioral patterns of community living facilities for the mentally retarded and the development of independence in two specific types of residential alternatives: the board and care facility (referring to apartment living with a hospital or other institution legally responsible), and the home-care type facility. The results indicated that board and care facilities were not only more normalized, but seemed to foster the development of more independent behavior as well. Increased community exposure facilitated normalization. Independent functioning was also related to geographic location of the facility (extent of integration with the community and the type of staff).

Although O'Connor's study provides a wealth of descriptive information about group homes and related community residential models, there has been no major study of the effects of group homes on residents. Despite this lack of data, the group home movement continues to swell, and group homes are seen as a major alternative for the developmentally disabled. Homes are still not available in sufficient quantity, however. According to Rosen and Callan (1973), superintendents of institutions for the mentally retarded did not report large increases in the number of group homes available between 1970 and the 1971-1972 year. Although 71 percent reported that group homes were available, the development of nursing homes and boarding homes was proceeding faster.

FOSTER, FAMILY CARE, AND ADOPTIVE HOMES

Foster or adoptive placements have traditionally been used for nondisabled children who lack adequate homes or are orphans.

They are also an option for similarly situated mentally and physically disabled children, although permanent adoptive placement is more difficult than foster placement in such cases. Foster placement is also used for handicapped adults, including mentally retarded adults released from large institutions. In California, for example, the family care home has represented a major vehicle for deinstitutionalization (Mamula & Newman, 1973). It typically involves placement of a few individuals in a home, much like many multiple-placement foster homes. The primary purpose of such placements is to provide supervision in a family-style environment. Training, if provided, is generally as informal as that provided by parents.

The adoptive home for "hard to place" children is increasingly being used for developmentally disabled children. The idea has grown out of the belief that all children are potentially adoptable and that given the proper supportive services, assistance, and guidance, there are parents who are willing to adopt disabled children (President's Committee on Mental Retardation, 1976).

Spaulding for Children of New Jersey is a non-profit adoption placement agency that deals with such children. The agency accepts referrals from all over the United States and Canada. Sources of referrals are normally public and private welfare agencies which have been unable to locate appropriate adoptive homes for handicapped children. Referrals most often involve physically, emotionally, and intellectually handicapped children. Many of Spaulding's placements are multiply handicapped. The referring agency is required to pay a purchase of adoptive service fee. Expenses which have prohibited couples from adopting children in the past, such as special medical or educational services, are often subsidized by the child's original state of residence. Currently, 36 states have subsidized adoption programs (President's Committee on Mental Retardation, 1976).

CURRENT STATUS

Foster care placements are increasingly being used for the developmentally disabled, but are also used for all types of disabled individuals, including the mentally ill. The Commonwealth of Virginia (1973) has recently investigated the possibilities of placing the severely mentally retarded in foster home settings. One of the most formidable obstacles to the use of foster homes as an alternative to institutional care, especially in the case of the more functionally dependent, is the difficulty of finding reliable homes in sufficient numbers (Helsel, 1972).

Sometimes the transition to a foster care environment can pose serious adjustment problems for children and adults who have been institutionalized for prolonged periods of time. Parents may also question the long-term stability of foster care and may desire a more permanent care stituation (National Association for Retarded Citizens, 1973; Helsel, 1972).

The New York Service for the Orthopedically Handicapped has sponsored a five year project which obtained data on the costs, staffing and circumstances of foster home placement for the developmentally disabled adult (reported by Helsel, 1972). Not only was foster care less expensive than institutional care, but it was an effective alternative to institutional care, provided that good social casework and an adequate system of supportive and protective services were available.

A Washington state project, the Family Homes for Adults Demonstration Project, was designed to meet the needs of individuals who, because of age, or physical or mental disability, require a protected home situation and some supervision to remain in the community. One of the goals of the foster home program was to delay the need of some individuals to enter a nursing home or institution and to enable them to remain in the community. In other cases, the goal was to allow the return to the community of those in nursing homes or institutions (Research Applied to Policy & Practice, Series A, No. 4, undated). In addition to finding homes for the clients, the Demonstration also organized group activities for both clients and sponsor and provided homemaker services.

Of 1,641 clients referred over a three-year period, 540 were placed. Thirty-five percent of 312 clients who left the project returned to or established their own homes. Eighteen percent entered nursing homes; 12 percent either returned to or entered an institution, and 18 percent disappeared from the project. As of August 31, 1971, 228 adults were still living in project family homes (RAPP, undated).

Pre- and post-placement assessment of levels of functioning were recorded by caseworkers. Most clients showed an increase in all areas of functioning, and deterioration was believed to have been slowed in many clients, thus preventing or at least postponing, the need for more restrictive types of care. For other clients, mental and emotional self-sufficiency had improved to the point that other less expensive types of care could be considered (RAPP, undated).

The Family Homes for Adults Demonstration Project appears to have had considerable impact. Prior to the Demonstration project, only three states were conducting foster family home programs for disabled adults, two of which accepted only the elderly. As a result of the success of this project, eleven states have now initiated their own family home programs. Evaluative data on adoptive placements are not yet available.

INDEPENDENT LIVING ARRANGEMENTS AND APARTMENT LIVING

Both the physically and mentally handicapped often need longer-term, supportive environments after they leave more intensive facilities. For example, group residences for the spinal cord injured are used, where they exist, as transitional facilities which have the purpose of preparing the individual for life in the general housing community. Fay (1975), however, has estimated that only one percent of the total housing in the

United States is wheelchair accessible (defined as having a level or ramped entrance and wide bathroom doors). Despite the fact that an estimated 65 percent of all quadriplegics could live independently with some level of attendant care (Young, 1972), many who leave rehabilitation centers functionally independent are forced to live in institutions which are inappropriate for their needs and which often negate rehabilitation goals realized in special centers for the spinal cord injured (Fay, 1975).

In response to the lack of suitable housing, spinal cord injured and other severely physically disabled individuals are organizing housing situations known as independent living arrangements (ILAs) (Frieden, 1975). In the mental health and mental retardation fields, meanwhile, it has been recognized that transitional halfway houses and group homes are not a total solution, that long-term informal supervision is required by many mentally handicapped persons. Consequently, apartment living programs are increasingly being used by the adult physically handicapped, the mentally retarded, and the mentally ill as long-term housing alternatives.

Apartment living programs are typically designed for individuals who are capable of relatively high levels of independent functioning and vary according to the extent of dependency displayed and amount of supervision required by the residents. An example of an independent living arrangement is the Cooperative Living project located in Houston, Texas. The project was initially housed in a dormitory-like structure with sufficient space for 12 severely physically disabled individuals, but has since moved to an apartment setting within the community (Stock & Cole, 1975; Frieden, 1975). The original funding for the Cooperative Living project was supplied by a research and development grant from HEW, with additional monies provided by the Texas Institute of Rehabilitation and Research (the sponsoring body). The Houston Housing Authority further assisted individual residents by providing rent subsidies. Other support came from the Texas Rehabilitation Commission and the federal Supplemental Social Security Income and Social Security Disability programs. The ultimate goal of the project, however, is to become financially self-sufficient (Stock & Cole, 1975).

The underlying concept of any independent living arrangement is shared services, which includes non-professional attendant assistance, meals, and transportation (Frieden, 1975). The Cooperative Living program group, for example, owns a van and employs a driver. Attendant care services are shared as well. Residents themselves participate in management, and all decisions are made by a council of four elected residents who share responsibilities equally. Resident management council members are paid for their work, which includes supervising attendants, hiring and firing staff, choosing new residents, and keeping financial records (Stock & Cole, 1975; Frieden, 1975).

The Cooperative Living Project has been the model for several other independent living arrangements (ILA) in the Houston area, most of which are located in accessible apartment complexes or apartments which have been remodeled to accommodate an occupant in a wheelchair. Two of the ILAs are provided transportation by non-profit corporations, and all utilize shared services. One of the ILAs has cafeteria services available in the complex, but in most of the ILAs, meal preparation is the responsibility of each resident, with attendant aid available as needed (Frieden, 1975).

The Weinberger Model is an independent apartment living arrangement in New York City for the severely physically disabled. Now known as Independent Living for the Handicapped, Inc., and largely financed by the Weinberger Foundation, the project began with the efforts of two handicapped persons who desired to live independently. Formally initiated in 1970, the project now serves more than thirty individuals with a wide range of disabling conditions, including cerebral palsy, muscular dystrophy, orthopedic problems, multiple sclerosis, arthritis, spina bifida, and post polio complications. The program, however, is limited to persons who are wheelchair-dependent and nonretarded (Dickman, 1975).

Prior to the project, many of the participants had been living in hospitals for a number of years. Others had always lived with their families, and due to family deaths or other personal reasons, no longer desired to do so. These individuals felt they could not accept the alternative of entering a hospital or another institutional setting (Dickman, 1975).

Once a group of interested handicapped people was organized, the task began of finding suitable apartments. Some problems were encountered with rental agents who were often reluctant and sometimes hostile about renting to disabled individuals. Most initial opposition, however, came from parents of Weinberger participants (Dickman, 1975).

Architectural barriers in existing apartments present further problems. The Weinberger Foundation budget did not provide for modification of architecture, but participants found that many apartments, especially those in urban areas, could be adapted to meet their needs without extensive and costly modification. As of 1975, eight participants lived in public housing, 11 had found apartments in privately-owned buildings, and seven lived alone; there were three sets of roommates, and nine married couples (Dickman, 1975).

While most of the participants required some degree of care, usually provided by home health aides or attendants, the project demonstrated that a far greater number of severely disabled individuals are capable of independent living than was previously thought possible. On the other hand, persons with certain disabling conditions such as severe cardiac conditions or those requiring attachment to life support systems would be excluded from participation in independent living arrangements such as those discussed above (Dickman, 1975).

An Apartment Living Training program (NARC, 1973) is a type of living arrangement for the mentally retarded which involves clusters of three or four apartments located in relative physical proximity, with one apartment for staff. The program provides a relatively unstructured environment. The staff works with each resident on skills such as cooking, budgeting and banking, housekeeping, interpersonal relations with friends and/or landlords, use of community services, and so on. This type of program is transitional, and its purpose is to prepare individuals for more independent living arrangements (NARC, 1973). Fritz, et. al., (1971) have described a variation of this model as the single "co-residence" model. This arrangement utilizes one or two adult staff members living in an apartment with two or three disabled persons as roommates and friends.

A "maximum independence apartment" might involve the disabled individual living alone or with roommates of spouses. In the case of the retarded, all supervision and assistance would be supplied by a volunteer citizen advocate or social case worker (Fritz, et. al., 1971). Apartment living programs are most often associated with parent corporations or agencies such as rehabilitation centers, community MHMR centers, local Associations for Retarded Citizens, hospitals, or private funding agencies (Rutman, 1976).

Type and extent of services depend on the type of client-residents served. Apartment living for the severely physically disabled will generally require a great number of services including transportation, live-in or occasional attendant aids, social casework, counseling, and arrangements for group meetings of tenants. An advantage of congregate apartments is that residents can cut costs by sharing attendants and pooling their resources to purchase other services (Dickman, 1975). Services for the mentally ill and the mentally retarded living in apartment situations would range from continuing vocational guidance and social services to friendly visit by volunteer advocates. In the Weinberger Independent Living Arrangement model, payments to attendant aides are made by Medicaid. SSI is a source of funds which can help to defray the costs of supportive services for the retarded (Dickman, 1975).

CURRENT STATUS

Independent Living Arrangements are at a demonstration phase of development and are not available in sufficient quantity to meet needs. They are similar in this respect to apartment living programs for the mentally ill and mentally retarded.

The Stock and Cole (1975) report of the Cooperative Living Project is one of the few reports on any residential model that has included information on benefits. Prior to entering the project, most residents had been living with families or in nursing homes and were inactive. Since the project's inception, 40 young adults, most of whom are spinal cord injured quadriplegics, have lived in the project. Residents spent an average of 15 months in the Cooperative Living dormitory, and most have since moved to even more independent living arrangements in the community. As of 1975, 26 were living in apartment clusters, six had developed other support arrangements, one had returned to a nursing home, and six had returned to live with parents or families (Stock & Cole, 1975). Most residents reported that they experienced fewer medical problems while in the project than they had experienced in other living arrangements (Stock & Cole, 1975). Almost all residents showed significant increases in activities, including increased independence, education, and employment. Table 9-9 shows the number of residents engaged in selected activities before and after the project.

TABLE 9-9
COOPERATIVE LIVING PROJECT: RESIDENT ACTIVITIES*

Type of Activity	Before No. Involved	After No. Involved
No Activities	19	2
Education	20	28
Vocational Assessment and Training	0	6
Part-time Employment	0	13
Full-time Employment	0	10

Source: Adapted from Stock & Cole, 1975

*Based on a sample of 39 Cooperative Living residents

The project's success in motivating residents is witnessed by the significant decrease in the number of individuals who were still inactive after living at Cooperative Living, and the increases in the number of persons engaged in educational or vocational activities. During their stay in the project, two persons finished high school, and began college.

OTHER MODELS

The entire set of housing and residential programming alternatives for the handicapped has not been described. For example, with respect to housing needs, it may well be that mobile homes will become an increasingly used option in the future if they become routinely designed to be accessible. The mobile home industry has just recently become aware of barriers and now supports state and federal legislation concerned with the elimination of architectural barriers within and outside of the home (Architectural and Transportation Barriers Compliance Board, Volume II, 1975).

The mobile home is the only type of housing that is financially feasible for many Americans, and this low cost makes them doubly suitable for the disabled who have traditionally earned low incomes. In 1970 nine million Americans were living in mobile homes, 45 percent of whom were over 45 years of age. Of this group, 17.2 percent were 65 and over. It is unknown how many of the nine million persons living in mobile homes are handicapped.

Recently some states have specified design regulations for mobile homes for the physically handicapped. Floor space, for example, must meet certain specifications (ATBCB, II, 1975). The Michigan Construction Code recently adopted barrier-free requirements that apply to all mobile units manufactured in the state. The costs of designing, developing, and getting approval of barrier-free mobile homes, however, are quite high. Small manufacturers may find it hard to compete with large established firms, and some form of government support for design and development is recommended (ATBCB, II, 1975).

As for residential programming, there are several options which have not been fully explored here. At one extreme is the concept of a segregated village for one disability group or multiple groups. Applied to the mentally retarded early in the century, this model is a self-contained, commune-style environment which provides sheltered employment or possibly employment in nearby communities (Jeffrey, 1973). Although this is not a population concept today in view of the philosophy of normalization and integration in the community, it still must be considered as an alternative to current residential programming models.

Halfway house and group home models have also been challenged from the opposite direction by those who favor more normalization than many residential facilities provide. In Nebraska, a pioneer state in the development of group homes, the whole concept was reevaluated when it became clear that group homes with heavy training components were costly and tended to become permanent fixtures in the community. One alternative which was considered was to invest instead in services to families which would permit them to keep their mentally retarded children (Skarnulis, 1975). Support to families might consist of environmental modifications, subsidy of babysitting, use of home trainers, and so on. This need for support to families with handicapped children has already been incroporated in the concept of respite care and crisis assistance.

Respite facilities provide temporary relief from responsibilities for parents of mentally retarded children, or may be used for short-term treatment and care of the psychiatrically disabled. They may also be used as transitional facilities which would provide periods of trial separation from parents before long-term placement. This type of temporary assistance often postpones early institutionalization (NARC, 1973). Crisis assistance homes provide living arrangements for all age groups and disabilities and have the goal of providing sheltered and supervised living for persons whose families are experiencing a crisis. Typical crises include divorce, financial problems, and sometimes child abuse or neglect (President's Committee on Mental Retardation, 1976).

There is usually no minimum respite care period, although the maximum stay may be specified. In Virginia, respite care programs are licensed as temporary foster care homes and serve all age groups and handicapping conditions. Fees are handled directly between the child's parents and the careprovider. Fees range from $1.50 per hour to $90.00 a week for 24-hour-a-day services (Commonwealth of Virginia, 1973). A Connecticut program charges $10.00 for the first day and $5.00 for each subsequent day of care, with fees generally being paid by the child's parents. Developmental Disabilities grants are also used, however, to subsidize respite care fees for families of lower incomes (Ficarro, 1973). Another option is to allocate beds in existing institutions or community residential facilities for respite and crisis assistance.

If respite and crisis assistance programs were emphasized in the future, in combination with support services to families, it is likely that at least some needs for residential programming would diminish. Similar intervention to enable the physically handicapped to live in their own homes would be feasible.

SUMMARY

All of the models described above are currently expanding. The trend toward barrier-free design and housing subsidy has grown out of the handicapped consumer movement and has been facilitated by legislation. The trend toward community-based residential programs such as halfway houses, group homes, foster homes, and apartment arrangements reflects the dissatisfaction with institutional models and the rise of funding for community mental health and mental retardation services.

Nursing homes, while not fully consistent with the principles of normalization and the least restrictive alternative, are changing character, primarily through the expansion of intermediate care facilities, to provide for a wider range of handicapped persons.

The increasing availability of so many options is a positive sign in its own right, given the narrowness of the choices which previously existed. It is not yet clear whether the very availability of these options will mean an increase in the numbers of persons desiring them, though it is apparent that many handicapped persons, while not utilizing government supported programs at present, are residing in less than adequate circumstances.

Evaluative information is scarce. It has not fully been established that any one model is effective, much less that one is more effective than another. Because more information is available with respect to cost than benefit, the next section is devoted to the costs of the models which have been delineated.

COSTS OF SPECIFIC MODELS

Although cost-benefit studies are virtually nonexistent, some cost estimates are available for the models described in the previous section. While they raise as many questions as they answer in some cases, they generally point to savings to the nation if present trends in housing and residential programming continue.

COST OF BARRIER-FREE DESIGN

Anticipation of extreme costs in the construction of barrier-free housing and structures has frustrated to some extent the development of suitable housing and accessible buildings for the handicapped. There is not general agreement, however, that the cost of accessibility features is negligible, at least when they are incorporated into the original design of a building (GAO, 1975). Very few studies have actually been undertaken to determine costs of barrier-free construction, but the few that have been conducted indicate that barrier-free construction does not add significantly to the overall cost of a structure.

The costs of barrier-free features at construction add only slightly to the total cost of a building, and are insignificant over the life of the structure. Estimates of additional costs range from approximately one-half of one percent to one percent of overall cost (Architectural and Transportation Barriers Compliance Board, Volme I, 1975).

While most sources agree that barrier-free construction is somewhat more costly than traditional construction, it cannot be concluded categorically that all barrier-free construction is more expensive. In fact, sometimes barrier-free construction results in a cost savings (GAO, 1975). In other cases, there is no added cost associated with barrier-free construction. Features which do not cost more include lower restroom mirrors, lower rails on stairs, lower fire alarm controls, and lower urinals. When these features are incorporated as part of renovation, they are much more costly: $36.00, $1,602.00, $20.00, and $28.00, respectively (GAO, 1975).

While some barrier-free features do cost more, this cost is not necessarily prohibitive. The Architectural and Transportation Barriers Compliance Board (Volume I, 1975) notes that a recent study in one city revealed that full compliance with all needs of accessibility in public buildings amounted to four-tenths of one percent of total construction costs.

The greatest increase in total building costs occurs when specialized features and equipment must be included to accommodate the handicapped. Some of the most expensive special features are special lavatories, toilet stall grab bars, and automatic doors (GAO, 1975; ATBCB, 1975).

The cost of making a house accessible for the wheechair bound is between one-half and one percent more than the cost of non-accessible housing. The cost of a special kitchen design for the handicapped would be about double that of a conventional kitchen (ATBCB, 1975). Only slight additional cost would be incurred if architects designed buildings close to ground level. While some items for the handicapped do cost more than conventional features, cost differences sometimes disappear during construction. For example, the installation of wider doorways creates an offsetting decrease in adjacent partitioning costs (GAO, 1975).

While there is little doubt that costs of remodeling exceed that of barrier-free construction, these costs are still relatively small when compared to total original construction costs. Percentages of total costs required for remodeling range from 0.06 percent to 2.4 percent (GAO, 1975). Certain accessibility features, of course, cost more to purchase and install than others. For example, the cost of an elevator would be the major additional cost in remodeling multi-story buildings. Relocation of controls and widening of doorways are also time-consuming and costly. Other features, such as ramps and curb cuts, are easier and less costly to provide by remodeling (ATBCB, 1975).

In 1967, the National League of Cities (Urban Institute, 1975) performed a study of several existing and hypothetical buildings to estimate the costs associated with barrier-free (as defined by the ASNI Standard) construction. After examining three existing buildings, the research team estimated that each building could have been constructed to provide total accessibility for less than one-tenth of one percent of the total construction costs. Six of the seven hypothetical buildings considered in the study could have been constructed to be barrier-free for less than one-half of one percent of total construction costs. The seventh hypothetical building, a two-story structure, would have cost 2.5 percent more, as an elevator had to be added (The Urban Institute, 1975).

Most experts agree that barrier-free construction does not add significantly to overall building costs. Young (1972) has indicated that environmental modifications--including changes within the home, place of work, schools, and so on--can be a source of savings in the rehabilitation of the spinal cord injured in that they reduce medical complications and the level of necessary attendant care. Young also estimates that 65 percent of all quadriplegics would require modifications in their present living environments that would total $5,000 per person. Seventy percent of all paraplegics would require modifications totalling $1,000 per individual. While these figures appear to be high, they actually constitute only a minor cost when considered in relation to the total cost of rehabilitation of the spinal cord injured. Furthermore, the costs of architectural modifications are basically a one-time expense.

Aside from economic considerations, many experts argue that the nation has a moral responsibility to provide an accessible environment for the disabled population. As was pointed out in a HUD publication, "Barrier Free Site Design" (1975), "the handicapped, do, after all, pay taxes."

COST OF NURSING HOMES

This business, estimated as generating 7.5 billion dollars annually, employs 722,000 persons. Increasing numbers of nursing homes are providing care on a profit basis, and physicians associated with these facilities often work on a fee-for-service basis, without responsibility for continuity in management or close coordination with other servies (Reichert, 1975). While a shift to a non-profit, social support system might be desirable, the problems involved in taking the nursing home business out of the open-market system are enormous (Reichert, 1975). Meanwhile, with the development of intermediate care facilities, the nursing home industry is likely to expand even more.

Transfer of Medicaid funds is often made directly to nursing home operators. In 1973, the State of New York paid $560 million in Medicaid funds to 600 nursing homes. The average annual cost per resident was $10,000, ranging from $22 to $70 per person per day. Medicaid funds come from the state and are meant to cover "the nursing home's operating expenses, debt interest, taxes, and depreciation" (Santiestevan, 1975). The present nursing home-Medicaid system requires a patient to liquidate all savings above $1,750 before he can be eligible for Medicaid. After this has been done, the nursing home is eligible to receive social security, welfare, and pension payments and to deduct these payments from the patient's monthly bill, which is then charged to Medicaid (Santiestevan, 1975).

Investigation of New York State's nursing home facilities also revealed that while homes are guaranteed a 10 percent profit, many were averaging around 20 percent in annual profits and some earned as much as 40 percent. Many nursing home operators have engaged in unscrupulous practices to increase profits. Audits disclosed that 10 percent of the state's nursing home facilities were overcharging Medicaid. The same investigation found that over two-thirds of the nursing homes were providing inadequate services. While these and worse nursing home abuses have been reported, there have only been seven referrals to the Justice Department concerning illegal practices in nursing homes in relation to Medicaid. In five of these cases, the Justice Department refused to prosecute (Santiestevan, 1975).

Stock and Cole (1975), comparing nursing home costs with the costs of other alternatives, set the cost per person per month of nursing home care at $513 for the categories of rent, meals, and attendant assistance. The same services in their Cooperative Living Project for the spinal cord injured cost $360. Nursing home care was less expensive, however, than apartment living with a private attendant. Thus nursing homes are a costly alternative for the severely physically disabled when there is a shortage of opportunities for developing shared cost arrangements with others. Noble (undated) estimated current nursing home costs at $7,000-$10,000 per year, and notes the waste involved in $24 to $70 per day nursing home placement for healthy, physically disabled persons.

Noble has described the provision of long-term care as "inequitable and burdensome." Subsidization varies from state to state and is extremely costly to the nation. There are estimates that over 1.5 million handicapped individuals live permanently in personal care of domiciliary institutions. Many of these are dependent on public support. Medicaid subsidization of the aged-skilled-nursing-home population ranged in 1973 from less than $800 per patient per year in some states to over $5,000 in New York (Noble, undated). Counting the cost of income maintenance of replacement transfers and medical costs, the national cost of long-term care in general in 1967 was around $15 billion. If present trends continue, this figure could rise to $170 billion by 1990. A little more than half of this expenditure is attributable to medical costs (Berkowitz, 1974). Moreover, as nursing home care becomes more expensive, a greater number of previously self-supporting individuals will be forced to rely on some form of public assistance (Noble, undated).

COST OF HALFWAY HOUSES

A National Institute of Mental Health (1975) publication, "The Cost of Mental Illness--1971," reported expenditures for direct care of the United States hospitalized population at over $9.5 billion. When both direct care costs and time and income loss are considered, the total cost of mental illness for 1971 was around $25 billion. Hospital care costs comprised around 40 percent of the costs of direct services. The costs of operating both rehabilitative facilities and halfway houses amounted to slightly under $195 million, representing 2 percent of the total direct care costs (NIMH, 1975).

Glasscote, et. al., (1971) have indicated that residency in a halfway house appears to cost about half as much per day as in state hospitals and a quarter of the cost of psychiatric units of general hospitals. Cannon (1975) reports that the average annual cost to operate a psychiatric halfway house was around $74,000 in 1973. Costs of an alcoholism halfway house were approximately $42,000. The reduced cost of alcoholism halfway houses is attributable perhaps to the fact that these facilities receive a great part of their funds from resident fees. Psychiatric halfway houses receive funding primarily from state and/or local governments. Welfare payments are reportedly the primary economic source of residents. The next most frequently cited source was vocational rehabilitation monies, with earnings ranked third.

Cannon (1975), indicates that salaries compose the largest single expenditure in both the psychiatric and alcoholism halfway house (49 percent and 44 percent, respectively). Food was the second largest expenditure, comprising 14 percent of total budget of halfway houses for the psychiatrically disturbed and 18 percent of the total budget of halfway houses for alcoholics. Rent or mortgage comprised 10.6 percent to 11 percent of the budgets for the two types of facilities.

Obviously, those facilities which offer a wider range of services will be more costly. There is also a tendency for free-standing facilities to be less costly than those associated or affiliated with parent organizations. However, Rutman (1976) cites that the difference in operating costs may be due to the duplication of certain administrative costs in the latter type of facility. According to Rutman and Piasecki (1976), per diem costs in for-profit facilities are higher ($18.30) than those in public or private nonprofit ones. Costs average about $16 per day per person and range from $12 to $18.

COST OF GROUP HOMES

In addition to the advantages of normalized living and community integration, small group home facilities, if properly developed, may be less costly to operate. Community-based locations often make it possible to purchase needed services at a cost lower than is often possible in an isolated institution where all services must be provided in-house. Furthermore, only those services actually needed by the group served need to be provided. Costs of construction, purchase, or leasing of small facilities should also be less on a per-resident basis. When both economic and social benefits are considered, annual benefits can be as high as $8,000 per mentally retarded person, based on savings in the cost of institutional care and increased productivity (Conley, 1973).

O'Connor & Sipe (1976) describe preliminary results of a cost accounting study of group homes for the developmentally disabled in Oregon, Washington, California, and Arizona. The Oregon researchers detect no substantial economy of scale, for larger facilities tend to consist of two or three smaller houses run by the same organization. There is no sizable difference between profit and nonprofit homes and no evidence that community residential facilities are a highly profitable enterprise. Of the operating costs, 60-80 percent is typically devoted to staff, and administrative costs range from about 5 percent to 30 or 35 percent. Children's homes are more expensive than adult homes.

Summarizing this research, the Oregon Rehabilitation Research and Training Center (1976, Annual Report) reports an average operating cost of $384 per month per resident (or close to $13 per diem) for 29 community residential facilities (the range was from $125 to $1,158). Capital costs per resident per month range from $52.59 for houses and $40.46 for special purpose conversions of buildings, to $135.62 for specially constructed facilities.

Table 9-10 presents costs per resident per month for several small residential facilities described by the President's Committee on Mental Retardation (1976). As indicated by O'Connor and Sipe (1976), children's facilities are generally more costly than those for adults. Moreover cost appears to be a function of the severity of the handicap and the amount of residential facilities (the range was from $125 to $1,158). Capital costs per resident per month range from $52.59 for houses and $40.46 for special purpose conversions of buildings, to $135.62 for specially constructed facilities.

Table 9-10 presents costs per resident per month for several small residential facilities described by the President's Committee on Mental Retardation (1976). As indicated by O'Connor and Sipe (1976), children's facilities are generally more costly than those for adults. Moreover cost appears to be a function of the severity of the handicap and the amount of service provided. An intensive behavior shaping unit is the most costly, and facilities for the multiply handicapped tend to be high in cost as well. More permanent residences which provide little in the way of specialized services are relatively inexpensive.

COST OF FOSTER HOME PLACEMENT

One of the few cost-benefit studies concerning foster home placements was included as a part of the Washington State Family Homes for Adult Demonstration Project (reported in Research Applied to Policy and Practice, Series A, No. 4, undated). Most figures represent only best estimates obtained from people associated with the project. Comparisons with prior living costs (mental hospitals, state schools) and probable alternate care costs, however, appear to be favorable. A case study of one of the program's clients reveals that prior to being placed in a foster home, the client was costing the state $770 monthly in maintenance. The total monthly cost in the foster home

TABLE 9-10
COSTS AND AUSPICES OF MODEL RESIDENTIAL FACILITIES FOR THE MENTALLY RETARDED

Type/Residents	No. Residents	Cost Per Resident Per Month	Auspices
1. Semi-permanent residence; Multiply-handicapped, retarded, pre-teenage	6	$520/mo.	Private, non-profit
2. Children's Group Home; Severely handicapped, non-ambulatory, non-verbal, 5-16 year olds	6	$405-485/mo.	Profit-making
3. Residential Care Hostel; Pre-teens and children below mild.	6	$481/mo.	Private, non-profit
4. Group Residence; Severely-moderately retarded pre-teens	8	$425/mo.	Public-agency
5. Short-term behavioral shaping residential unit; Severely and Profoundly retarded 10-20 years old	8	$1200/mo.	Public-agency
6. Transitional Hostel; Various disabilities including retardation and mental illness (adults)	16	$356/mo.	Private, non-profit
7. Group Residence; Blind retarded men	8	$583/mo.	Private, non-profit
8. Semi-Permanent Group Home; Severely-Moderately retarded adults	5	$416/mo.	Private, non-profit
9. Permanent Residence; Severely-Moderately Retarded women	7	$295/mo.	Private, non-profit
10. Family Care Residence; Retarded women over 60	3	$225/mo.	Private, profit-making
11. Senior Citizen Group Home; Retarded elderly men	14	$200/mo.	Public-agency

Source: President's Committee on Mental Retardation (1976) program, including staff, payments to the foster family, and personal incidentals was $353.00. Over a period of 30 months, this represents a savings of $12,510 in public welfare monies. The project is seen as cost effective, and it is believed that use of public assistance recipients as sponsor families could further reduce welfare costs.

The Commonwealth of Virginia (1973) has compared the costs of foster homes with that of institutional placement for the mentally retarded with favorable results for foster care programs ($1,670 per placement per year compared to $5,440 for institutions). While these figures are considerably lower than most available estimates, and do not reflect the generally higher absolute costs of institutional placement naturally, they point to the relative economy of foster placement.

A recent study by the New York State Board of Social Welfare is one of the few providing cost comparisons of several alternatives--in this case, alternatives for the whole range of children in New York City needing shelter or long-term placement (Bernstein, Snider, & Meezan, 1975). While the authors recognize that the figures are not firm, they are suggestive (see Table 11). These estimates show that foster and adoptive placement are relatively inexpensive compared to other temporary and long-term residential placements. The most expensive alternatives are the large institutions and intensive treatment centers, with group homes intermediate in cost. Almost all residential options are more expensive than nonresidential alternatives for children who could return to their homes if

TABLE 9-11
ESTIMATED PER-CHILD PER-DIEM AND PER-CHILD PER-YEAR COSTS OF FOSTER CARE PLACEMENTS AND ALTERNATIVE SERVICES (IN DOLLARS)

Type of Placements	Per-Diem	Per-Year Costs
Temporary Foster Care		
Foster home	14.14	5,200
Group home	42.13	15,400
Group residence	51.03	18,600
General institution	93.09	34,000
Secure detention	115.31	42,100
Long-Term Foster Care		
Foster home	14.14	5,200
Agency-operated boarding home	29.25	10,700
Group home	42.13	15,400
Group residence	45.14	16,500
General institution	46.33	16,900
Institution for the retarded	44.77	16,300
Foster home, prospective adoptive		
Adoption	14.14	5,200
Other Systems		
Lifetime care	78.00	28,500
Alternative Services		
Comprehensive family center		900
Casework agency		1,000
Child guidance		2,000
Homemaker		2,000
Family day care		2,000
Day care center		4,000
Day treatment		8,000
Drug/alcohol rehabilitation		2,800
Housing assistance		1,000

Source: Bernstein, Snider, & Meezan, Foster care needs and alternatives to placement. A projection for 1975-1985, 1975.

they had appropriate services. As a final note, while these costs reflect the high cost of living in New York City, they may not fully reflect some of the extra costs which might be involved in providing for groups of severely handicapped children.

COST OF INDEPENDENT LIVING ARRANGEMENT AND APARTMENT LIVING

The National Institute of Neurological Diseases and Stroke (1973) has reported that the average per-case cost of annual care for persons with spinal cord injury is higher than that of twenty other disabilities analyzed by the Institute. The Cooperative Living project and other independent living arrangements have demonstrated that not only are severely disabled individuals capable of living independently, but that a community-based arrangement is a much more economical solution than is institutional placement. Table 9-12 shows a comparison of monthly living costs in a nursing home and three types of independent living arrangements.

Apartment living arrangements for mentally retarded adults are often the least expensive means of providing suitable living arrangements for more functionally independent individuals. Part of the savings is associated with the need for relatively little in the way of special services and supervision. Fritz, et. al., (1971) have delineated four basic expense categories incurred in apartment living programs for the mentally retarded: (1) direct expenses which include rent and food, as well as costs for live-in staff and their assistants; (2) supervision and guidance provided by counselors or social workers who are part of a residential services staff; (3) overhead and administrative expenses of the overall residential services division or agency; and (4) expenses and overhead of the total mental retardation service system.

TABLE 9 -12
LIVING COSTS IN VARIOUS RESIDENTIAL ENVIRONMENTS
(IN DOLLARS/MONTH)

Item	Nursing Home	Cooperative Living Project	Shared Apartment with Shared Services	Apartment with Private Attendant
Rent		110	150	170
Meals		60	120	120
Attendant Assistance		190	200	320
Transportation	100	40	50	100
Personal Needs	130	130	130	130
Total Costs	743	530	650	840

Source: Stock & Cole, Adaptive housing for the severely physically handicapped, Rehabilitation Counseling Bulletin, 1975.

Blakeman (1974) describes an apartment living arrangement for the mildly retarded in which residents share all expenses (paid for with earnings) with a live-in housemate who provides help and supervision as needed. In other cases, a client might be subsidized by a regional service system or might be eligible for state, county, or federal assistance (Fritz, et. al., 1971). The apartment program described by Blakeman costs the state of Nebraska only $620 annually in per capita salary costs. The housemate (or Apartment Associate) is paid $100.00 monthly in return for the provision of help and guidance to retarded co-residents.

The National Association for Retarded Citizens (1973) outlined planning budgets of expenses for both apartment living training units and more independent living units for the mentally retarded. The apartment living training situation provides a live-in trainer who resides in one apartment of a cluster. It is projected as being more expensive ($11.69 per diem cost) than the independent apartment living situation with out-of-house supervision and consultation provided by a social worker on a periodic basis ($9.95 per day).

Goldmeir (1975) estimates costs of supervised apartment programs for the mentally ill as ranging from $3 to $8 per client per diem. Although this figure is not well-documented, apartment programs are nonetheless less expensive to operate than boarding homes, long-term care facilities, or halfway houses. Costs in such facilities range from $7 to $15 per client per diem according to Rutman (1976). Apartment programs are less costly to operate since plant and staff costs are reduced and fewer on-site services are provided. Supervisory costs in apartment programs are quite low--perhaps as little as $1 to $2 per person per day (Goldmeir, 1975).

SUMMARY

Making conclusions concerning cost figures for various housing and residential models is difficult. Provision of accessible housing appears to be very inexpensive, particularly if the housing industry adopts standards of accessible design which then facilitate special adaptation of accessible units to meet individual needs. As for residential programming it would appear that alternatives to institutionalization for those who do not require the full range of specialized services can result in considerable savings. Rutman (1976) has compiled estimates of the costs of alternatives for the mentally ill which serve as a useful summary (see Table 9-13).

TABLE 9-13
PER DIEM COSTS OF ALTERNATIVES
FOR THE MENTALLY ILL

Option	Per Diem Cost
State hospital	$31
Skilled or intermediate care nursing home	$20-30
Halfway house	$12-18
Boarding home	$7-15
Supervised apartments	$3-8

Source: Rutman, I.D., Adequate residential and community based programs for the mentally disabled, 1976.

The figures reported earlier comparing foster home placement to other alternatives similarly confirm the savings associated with community residential models. Foster homes ($14.14 per diem) were less expensive than boarding homes ($29.25), group homes ($42.13), institutions for the retarded ($44.77), or other institutional alternatives (Bernstein, Snider, & Meezan, 1975).

Further study is clearly warranted. Cost estimates have been based on diverse methodologies. In comparing institution costs with those of community alternatives, most studies have focused on direct costs and have not fully considered the costs of community services which replace services provided in institutions. Nor has it been recognized that while many community residential options are less costly, total public expenditures might rise considerably if persons currently residing in the community in less than adequate circumstances availed themselves of an expanded continuum of residential models (The Urban Institute, 1975). Finally, major studies relating cost to benefit are long overdue. An inexpensive alternative is not necessarily a good alternative.

FUNDING MECHANISMS

Sources of funding for housing and community residential programming have been varied, but difficult to come by and maintain. Funding has a definite range of possibilities, but sources have been characteristically fragmented.

Housing for the handicapped has generally been constructed with public money under the auspices of HUD or the Housing Finance Agency in conjunction with local housing authorities (Jeffrey, 1973). Jeffrey points out the need for national regulation in this area. For the physically handicapped, a major problem is obtaining funding for specialized services provided in their housing arrangements, and according to Melia (1974), there are no current state-federal programs which can be considered readily available resources for this purpose. Some of the possibilities catalogued by Melia include: Vocational Rehabilitation, Developmental Disabilities, Social Service Revenue Sharing, General Revenue Sharing, Medicaid Intermediate Care Facilities, Supplemental Security Income, the Social

Security Disability Insurance Program, Medicaid and Medicare to individuals, Community Mental Health Centers, comprehensive Health Planning and grants for Public Health Services, and Maternal and Child Health Services-Crippled Children's Services. Some sources, like Vocational Rehabilitation and Medicaid and Medicare, can be used to fund specific services received by clients (vocational training or medical services). Others, such as grants from Developmental Disabilities or the National Institute of Mental Health, can fund housing operating expenses such as staffing. SSI and SSDI, by contrast, provide income maintenance directly to handicapped persons, and this income can then be used to purchase room, board, or care. While some funds can support ongoing operations, others are useful only in startup--for example, use of HUD support in construction, or developmental disabilities demonstration grants for developing and implementing a model which then must be supported through other means. In addition to federal funds, there are a variety of public and private state and local resources to be tapped.

The picture is complicated by the fact that residential facilities themselves can be public, private nonprofit, or private profit-making in nature. The public agency designing community residential programs has three basic options. (1) direct ownership of a facility; (2) purchase of services from another agency or from a private body; or (3) second and third party financing, whereby a private body contracts with the service agency to develop a facility which then receives its funds from still another public agency (Soforenko & Sommer, 1973).

The last option creates the greatest problems with respect to administration and quality control.

The net effect of all of this is that many residential facilities must put together complex packages of resources in order to cover costs. Thomas (1973), for example, describes the budget of a home for mentally retarded adults as consisting of SSI, Veterans Administration and Railroad Retirement benefits for some qualified residents, earned income, other personal sources, Public Assistance, and appropriated funds from the state Office of Developmental Disabilities. The state has also used HUD monies and funds from private foundations and local Associations for Retarded Citizens in constructing facilities.

In reviewing options for facilities for ex-mental patients, Rutman (1976) concludes that funding is scarce and often unreliable. Rather than recommending ammendment of old legislation, he calls for new legislation which would authorize new sources of funding. The problem of funding--particularly the fragmentation of funding resources--is closely aligned with an emerging problem to be discussed in the next section: monitoring and accountability.

PROBLEM AREAS AND ISSUES

Like any new social movement, the effort to develop a full range of housing and residential programming alternatives for the handicapped is creating problems as it solves them. Previously, the able majority had its way: it could be oblivious to the needs of the handicapped minority for environmental modifications of housing and could fulfill its obligations to provide residential programs through a policy of segregation. With the shift toward barrier-free design and community residential programming, stimulated by a more effective consumer lobby, the wills of the majority and minority are in direct conflict over the issue of integration versus segregation.

In this section, the negative attitudes are considered. These include the public's attitude toward residential programs in their communities, the preference of the handicapped for integration with the able population, and the issues involved when these opposing viewpoints are articulated in the language of zoning ordinances. Also considered are the potentially negative effects on the handicapped themselves of the trend toward integration in the community, which is constrained not only by negative public attitudes but by the lack of an adequate network of community services and by difficulties in monitoring and accountability associated with geographic dispersal and decentralization of administration.

ATTITUDES OF THE PUBLIC

The community residential movement has meant that the handicapped, rather than being institutionalized and "out of sight, out of mind," have become neighbors of the nondisabled. Prejudice toward the disabled certainly exists, and to some extent it has affected residential programming--particularly when citizens attempt to use zoning laws or other means to block the establishment of homes.

It has been estimated that at least 50 percent of all proposed community-based programs for ex-mental patients are blocked from starting because of neighbor opposition (Rutman & Piasecki, 1976). O'Connor's (1976) survey of community residential facilities for the developmentally disabled revealed that one-third of the facilities reported having experienced opposition at the time of their establishment. Little opposition to facilities for the physically disabled has been reported.

Where negative attitudes toward residential facilities are expressed, they often center on safety and well-being (particularly of children), and on anticipated lowering of property values. However, the ASPO report (Lauber & Bangs, 1974) cites studies indicating that fears of violence by residents of facilities for the mentally ill and mentally retarded are baseless. The report also formulates evidence that contrary to public misconceptions, facilities have no adverse effect on property values. In the case of Crofton House, a halfway house, there was no change in the number of property sales and the relative prices of houses after the home opened (Hecht, 1970). The Stockton, California Department of Planning (cited in Lauber & Bangs, 1974) surveyed over 200 neighbors of foster homes for the elderly and found that 84 percent felt the homes had no effect on property values. In this same survey, 80 percent saw no restrictions on children's play, 93 percent reported no traffic or parking problems, and 75 percent did not notice any unusual acitivity. The ASPO report also cites observations by the San Francisco Planning Department of foster and family care homes showing no signs that the homes created unusual noise, parking problems, or traffic.

The California State Department of Health (reported in Lauber & Bangs, 1974) did field research on community attitudes toward family and group care facilities and concluded that negative attitudes were due to "a lack of knowledge concerning the program and its objectives and fear of the stereotypes of the people being cared for in these facilities." It was also concluded that although agencies and communities may initially oppose placing facilities in residential areas, their attitude changes when they become more informed. Although it would be useful to have more data, these studies suggest that community residential facilities, or at least those which are small and homelike, have no negative effects on the property values and the character of neighborhoods, and that neighbors accept them as appropriate, or at least have no major complaints about them. What is not clear is whether one can expect neighbors or community residential facilities to act in positive ways toward the facilities and their residents.

PREFERENCE OF THE HANDICAPPED

Traditionally a substantial segment of the disabled population has been segregated from the mainstream of society--either through institutionalization or due to inaccessibility of community housing and other facilities. The principle of normalization, however, would dictate the integration of the disabled and the nondisabled to the greatest extent possible. The public, as evidenced by their reactions to community care facilities, prefers segregation. While few in number, surveys of the disabled about their preferences in living accomodations have revealed that most disabled persons would prefer a normalized environment and integration with the able population.

HUD has taken a stand, adopting the policy that concentration of handicapped individuals is desirable for the following reasons: (1) cost and (2) the belief that handicapped individuals can often benefit from association with other similarly impaired persons and can offer mutual psychological support (Columbus & Fogel, 1971).

Recently, this policy has been evaluated for possible negative effects, especially those produced by mixing the youthful handicapped individual and the elderly as if their needs coincided (Fishman, 1971). Some investigators have also noted that while federal legislation now requires that 10 percent of all units in housing projects for the elderly must be accessible to the physically handicapped, occupancy rate is well below expectations. In order to clarify these issues, as well as to assess needs, several surveys of housing preferences of the disabled have been undertaken.

While it cannot be categorically concluded that the youthful handicapped and the elderly are incompatible, most studies which have focused on this issue have revealed that this mix is not always desirable. Anecdotal evidence collected at Center Park, a Seattle project for the orthopedically and neurologically physically impaired, indicates that youthful and elderly residents tend to segregate themselves. Though the actual dynamics of the situation are unknown, it appears that the segregation takes place by mutual consent (Fishman, 1971).

A 1970 study in Philadelphia found that few handicapped individuals prefer to live in projects designed exclusively for the disabled, or for the elderly and disabled only. Twelve percent preferred housing exclusively for the handicapped, 17 percent preferred housing for the disabled and elderly combined, 17 percent indicated a preference for housing and for handicapped with few non-handicapped residents and 52 percent wanted to live in housing primarily for the able-bodied (Lauder, 1970).

Perhaps the most comprehensive study of housing preferences of the disabled was undertaken in 1970 by the Massachusetts Association of Paraplegics (MAP). Approximately 1,000 disabled individuals responded. Results are shown in Table 9-14.

TABLE 9-14
TENANT POPULATION PREFERENCES OF THE HANDICAPPED

Tenant Population	% of Study Sample with Preference
Handicapped & elderly	5.0%
Entire building for handicapped	7.0%
Handicapped & able-bodied (80% & 20%)	14.0%
Handicapped & able-bodied (50% & 50%)	61.0%

Source: Melia, R.P., Special services in housing for handicapped persons, 1974.

The table shows that most respondents prefer to live among the able-bodied. Interestingly, the least-perferred mix was that of handicapped and elderly. It has been pointed out that the MAP sample was somewhat biased with respect to age. Only 9 percent of the respondents were over 60, and a large majority of the 5 percent preferring the handicapped elderly mix were over 50 years of age (Michel, 1972). This very bias, however, highlights the opposition of young handicapped persons to coexistence with the elderly.

The state of California (1969) also found evidence that many young handicapped persons do not like to live with an elderly tenant population. All study participants who were primarily young adults who were living in families almost exclusively designed for the elderly.

Columbus and Fogel (1971) report similar results. Their study of the housing preferences of 455 individuals with a wide range of handicapping conditions was conducted in Philadelphia. Results based on interview and questionnaire data show that the majority of respondents preferred living in a facility designed mainly for the nondisabled but which could also accommodate a small number of disabled persons. The least preferred choice was housing designed only for the physically disabled of all ages. Choices were directly related to age, however. Subjects over sixty years of age were the least likely to reject facilities designed for both physically disabled individuals of all ages and the nondisabled elderly. Only 18 percent of the 51-60 age group most preferred to live with the elderly. An overwhelming majority of the youngest group of respondents rejected this type of housing. A further analysis of the respondents' functional capacity revealed that as the level of independence decreased so did the desire to live with a non-disabled population. Persons with non-visible disabilities (cardiac or respiratory disabilities) highly rejected living with the physically disabled, while individuals with visible disabilities showed greater acceptance of housing for the physically disabled. Columbus and Fogel (1971) indicate that most of the disabled respondents in their study preferred housing which is now available to everyone, but which is usually architecturally inaccessible.

Such studies help to explain marketability problems associated with specialized units in housing projects designed for the elderly. The Boston Housing Authority (Bennett & Tambone, 1975) attributed a high vacancy rate in units designed for the handicapped to the perceived undesirability of mixing these two populations.

Due to these problems, some experts advocate the construction of housing which is suitable for both the disabled and non-disabled. This would not only solve the marketability problem, but would also satisfy the expressed preference of many handicapped persons for a non-segregated environment (Fishman, 1971). This approach involves the concept of "adaptable design," which allows a building to be designed so that all space and facilities could be made accessible as needed. Examples of adaptable design are removable auditorium seats and adjustable toilet seats (Kliment, 1975). The critical task for policy makers will be to balance the preferences of the handicapped and the preferences of the nonhandicapped, along with the other considerations involved--cost, benefit, and human rights.

ZONING BARRIERS

Because the trend community residential facilities is fairly new, local zoning ordinances were not written with such facilities in mind and often pose a barrier to their establishment of a vacility, they often check into zoning laws and find them an effective tool for blocking the facility; in other cases, they may exert enough pressure to make permit-granting agencies reconsider a proposed facility site, or to stimulate the enactment of new zoning restrictions. When smaller facilities such as family care homes and group homes are not specifically provided for in ordinances, they are often treated as though they were boarding houses, institutions, hospitals, or other facilities which are excluded from many residential zones. Much controversy has arisen over the appropriateness of residential facilities, even small ones, in single-family districts.

The American Society of Planning Officials (ASPO) conducted a survey of 400 planning department directors to study the status of zoning ordinances as they apply to community care facilities (Lauber & Bangs, 1974). ASPO received responses to the 13-question survey from slightly fewer than half of the directors. The survey provided definitions of ten types of social service facilities, ranging from small foster homes licensed by welfare to large residential facilities. The descriptions specifically mentioned such groups as the mentally retarded, the physically handicapped, former convicts, alchoholics, drug addicts, delinquents, and the mentally ill.

Lauber and Bangs found that in about half of the cities, zoning ordinances did not specifically provide for rehabilitative residential facilities. In about 40 percent of the cases, family care facilities (5-7 or fewer residents) were allowed in single-family districts. More than two-thirds of the ordinances excluded larger group care facilities from single-family districts, although more than 40 percent allowed them in commercial zones. Although only 13 percent of the respondents had based their zoning provisions for such facilities on studies or analyses, those few which did were reportedly more prone to allow family care and group care facilities in single and multi-family zones.

The two most frequent reasons for denial of applications were "substantial opposition from nearby landowners," and the related reason, "community prejudice toward class of condition of persons to reside in proposed facility." These findings highlight the important role of community prejudice and opposition in the processing of applications.

Hopperton (1975), in a publication prepared by the Law Reform Project at Ohio State University, clarifies the zoning issue in Ohio and recommends legislation to circumvent current problems. According to the report, fewer than 1 percent of Ohio's 900 municipalities have zoning ordinances favorable to community residential facilities. Ordinances sometimes have a narrow definition of "family" which effectively excludes homes from single-family districts---for example, where family is defined in terms of kinship, or where there are limits on the number of unrelated persons who can occupy a household. Ordinances may pose an obstacle to the development of small foster or family care homes in single-family zones, even when the nature of the home is very similar to that of a natural family with several children.

The recommendation to establish facilities through "special use" (as contrasted with permitted use) permits by both the Law Reform Project and ASPO is tied to the belief that community residential facilities should be dispersed in the community rather than concentrated in one or two receptive areas. A special use or special exception clause in a zoning ordinance would allow the zoning body to examine whether the introduction of a new facility would saturate an area before approving it. The fear is that "developmental disabilities ghettos" or "de facto social service districts" might be created, pushing neighbors beyond the limits of their tolerance and, at the same time, creating something resembling an institutional atmosphere which might be detrimental to the disabled.

COURT CASES ON THE ZONING ISSUES

The Law Reform Project report concludes that a municipality cannot exclude residential facilities entirely because care of the disabled is a state concern which transcends local power. The more critical issue is whether they can exclude them from certain zones, particularly single-family districts. Hopperton's (1975) report cited several relevant court cases.

A recent Ohio case, Driscoll v. Goldberg, set a precedent pertaining to the establishment of facilities in single-family districts. A family care home for several retarded children was allowed in a city which had a broad definition of family ("one or more persons occupying the premises and living as a single housekeeping unit"). There was no difference, in the court's mind, between the uses to which the family care facility would be put and the uses which would be made of land by a natural family with a father and mother and 11 natural children.

The question was clarified too by the case of City of White Plains v. Ferraioli in New York, where family was defined more narrowly in terms of kinship. The Court of Appeals ruled that the city could not prevent the operation of a family care home for ten foster children, arguing that the definition of family could not "exclude a household which in every but a biological sense is a single family."

APSO's report cites cases which have been unfavorable to the development of residential facilities (Lauber & Bangs, 1974). The U.S. Supreme Court ruled on the case of Village of Belle Terre v. Boraas, in which there was a narrow definition of family in terms of "blood, adoption, or marriage." The village argued that six graduate students in a single-family district would adversely affect population density, noise and traffic control, and the rent structure. Although a federal appeals court ruled against the Village, the Supreme Court overturned the decision, pointing to the community's rights to maintain its values. This ruling was perceived as a setback by proponents of group homes because there had been a trend to challenge requirements of blood relationships by arguing violation of equal protection. However, it was not clear whether this decision would affect homes which do not disrupt neighborhood life styles and values and which, instead, pattern themselves intentionally after the traditional family model.

While several other relevant cases might be cited, it is apparent that no firm trend in court decisions has yet emerged. Rulings have most often gone in favor of community residential facilities when they do not change the character of the neighborhood; when the community can argue persuasively that the rights of the community to establish and maintain neighborhood identities is compromised, decisions are likely to go against the facility.

GAPS IN THE NETWORK OF COMMUNITY SERVICES

Rutman (1976) stresses the importance of community services in the successful readjustment of former mental hospital patients. The same theme has been echoed throughout the literature with reference to other handicapped groups. Few residential programs provide all services in-house; in a sense, that would defeat the purpose of locating residential programs in the community rather than in self-contained institutions. Thus, the very success of many housing and residential programming alternatives hinges on the availability of services. At present, the status of such services is questionable and constitutes another problem in housing and residential programming.

The Commonwealth of Virginia (1973) reports that all or almost all of the problems encountered in attempting to acquire supportive services for community residences for mentally retarded individuals are attributable to the following: (1) lack of integration and insufficient role definition within and between agencies; (2) resistance to change and prejudice on the part of agency personnel; (3) insufficient resources to assume added responsibilities of providing services to the individuals in question; and (4) lack of authority on the part of project personnel to affect change in any of the problem areas.

A 1975 study by Rutman found that there are approximately 100 to 125 freestanding resocialization programs for the mentally ill in the United States. A similar number of programs are affiliated with parent organizations such as mental health associations or churches. Only a few of these programs provide comprehensive services, combining social, recreational, counseling, vocational training, and residential arrangements. Examples of such programs include Fountain House in New York, Horizon House in Philadelphia, Thresholds in Chicago, and Portals House in Los Angeles. Most community services operating in conjunction with residential facilities are small and offer only the most basic social, recreational, and vocational services.

As for the physically handicapped, there are no current state or federal programs which may be considered as readily available funding resources for the purchase or provision of services in specialized or adapted housing. (Melia, 1974). Berkeley has a unique community-based system of services created by and for the physically disabled which includes aids to independent living. Berkeley's Center for Independent Living benefits from already existing neighborhood centers such as Neighborhood Legal Assistance, orthopedic suppliers, attendant readers, a university, and regional headquarters of various service organizations. In a smaller or regionally less significant area, many of the services and features would have to be provided internally, escalating costs (The Urban Institute, 1975).

This points to the special problems of obtaining necessary supportive services in rural areas. For example, while transportation is essential to the existence of any housing program for the disabled, in the rural areas, it is critical. Residents will often need to utilize available support services and programs in surrounding communities, which are sometimes fifteen to thirty miles away. Since the population is spread over a greater area, identification of potential residents and assessment of needs are more difficult. Programs in rural areas tend to be somewhat more conservative than similar programs in urban areas and tend to use and reuse resources at hand (Nielsen, 1975).

The problem is not always the shortage of services. Often it centers on the ways in which services are organized. Melia (1974) indicates that presently there are more than 2,000 separate organizations in the United States which provide rehabilitative services to the disabled. Historically, the service delivery system has been compartmentalized by disability type and fragmented in terms of types of services provided. This situation has resulted in costly duplication of services and has meant exclusion of many disabled persons from needed services. As a result, many observers of the service delivery system are advocating the development of a continuum of services which would be generic in nature.

If expansion of housing and residential programs continues without concomitant expansion and integration of the service network, there is a high likelihood that the handicapped will not be as well served as they were in multi-purpose institutions and that the community services which do exist will be seriously strained.

MONITORING AND ACCOUNTABILITY

Community residential programming has already generated some special problems with respect to monitoring and accountability. Three problems highlighted here are associated with: (1) chaos with respect to licensing and standards of quality; (2) geographic dispersal of facilities and consequent decentralization of administration; and (3) a trend toward contracting of residential services associated with diffusion of responsibility.

This report has already alluded to problems associated with licensing and certification of facilities. In the case of halfway houses, many are inappropriately licensed or not licensed at all; in the case of nursing homes, quality standards have not been uniformly met. Residential programs are subject to varying fire, health, safety, and building codes, as well as residential program standards. State, county, and city governments may all have requirements, and sometimes two or more must be met by the same facility, even if the specifications are in conflict. O'Connor (1976), for example, found that over one-fifth of community facilities for the developmentally disabled has to obtain two or more licenses of the same type (fire or health) from different agencies. While more regulation than necessary may be better than too little, O'Connor rightly calls for streamlining. As for program standards, they are in lesser abundance, but like fire, health, and building codes, they vary widely from state to state and locale to locale. While many service agencies have developed their own standards, some have drawn on new national standards--for example, those of the Accreditation Council for Facilities for the Mentally Retarded and the Joint Commission on Accreditation of Hospitals developed for facilities for the mentally retarded and developmentally disabled. (O'Connor, 1976). The missing ingredient is a coherent and parsimonious system for licensing, certification, and evaluation.

A second cause for concern about monitoring and accountability stems from geographic dispersal of facilities. Geographic dispersal of residential programs is a key element of the normalization principle. A network of small community-based facilities, as contrasted with a large institution, allows handicapped persons to maintain contacts with their families, use community services, and become integrated into the life of the community (Wolfensberger, 1972). Yet, because of zoning battles, there has been some tendency for facilities to cluster in areas willing to accept them, particularly in old, low-income, and high density areas (Lauber & Bangs, 1974). This is perceived as an unhealth trend which subverts the goal of community integration and increases the chances of community opposition to "dumping grounds" or ghettos of handicapped persons (Lauber & Bangs, 1974). However, even if some degree of "ghettoization" occurs, the fact remains that community residences are more dispersed, and therefore less easily monitored, than services provided under the single roof of a large, multi-purpose institution.

A third problem, related to geographic dispersal and having similar effects, is associated with the contracting out of responsibility for residential programming by state agencies and a consequent diffusion of responsibility. Because mechanisms of funding are changing, the traditional methods of monitoring and administering the service delivery system are changing also. The National Association of Retarded Citizens (1973) has predicted that state governments will exercise their responsibility by contracting for most residential services rather than providing all services through existing state institutions. While this increases the options available, it also necessitates increased monitoring. Helsel (1972) has reported that the use of contracted for-profit services has already begun in some states, but some have encountered problems due to the lack of an effective monitoring system. She considers the existence of a protection and advocacy system crucial to the success of such programs. Protective services are designed not only to monitor services, but to prevent their underutilization, to help focus programs away from overprotecting clients and toward maximizing independence, and to protect the civil and human rights of persons who are recipients of such services (Helsel, 1972).

Other experts have recommended the establishment of non-profit corporations to administer the residential service system. An example of such a corporation is the Eastern Nebraska Community Office of Retardation. An alternative to this model is to have each house or residential facility owned by a non-profit organization which would supervise the manager, arrange for the delivery of services, and be accountable for the home and its operation (NARC, 1973).

Whatever option is taken, service agencies responsible for the handicapped must find some suitable way of insuring the quality of programs which are geographically dispersed and run by others if community residential programs are to be more effective than, or even as effective as, institutional models. A continuum of dispersed facilities, some private, some public, can easily become a disjointed set of "dead ends" with no mechanisms for quality control or orderly transition from alternative to alternative when clients' needs change.

RECOMMENDATIONS

The recommendations are brief and fall under three headings--research needs, education and training needs, and policy considerations.

Research Needs

1. Needs assessment. As was evident in the first section of this paper, the numbers of handicapped persons in need of various housing and residential alternatives are unknown. Many writers have noted this same problem, the solution to which is a rather complex set of surveys which would have to take into account consumer preferences, functional levels, and local conditions (the availability of supportive services). It is a matter of determining the marketability of housing options for the handicapped and enabling appropriate matching of residential program to resident need.

2. Cost-benefit analysis. Alternatives should be examined and compared not only with respect to cost, but with respect to benefits. This will require the development of adequate tools of cost analysis which reckon with indirect costs and measures of benefit which assess resident functioning and effects on on the nonhandicapped population.

Education Needs

1. Education of architects and builders. If national policy directed toward the removal of architectural barriers is to be effective, architects and builders must be educated to standards and to means of meeting them. Moreover, encouragement to explore more ambitious plans for adaptive design might yeild more adequate solutions.

2. Education of zoning bodies. The American Society of Planning Officials has already taken an interest in this area as evidenced by its publications (e.g., Lauber & Bangs, 1974) which suggest changes in zoning ordinances which would permit the establishment of community residential options on an orderly basis. As is the case for those who apply building codes and fire and health standards, the need for education centers on recognition of the principle of normalization and the difference between newer homelike facilities and more familiar institutional models.

3. Community education. As Rutman (1976) and others have emphasized, the community residential movement has now come to the attention of the general public, but the public continues to operate under misconceptions concerning the negative effects of facilities on neighborhood integrity, crime, and property

values. Although many program planners have opted against informing and educating neighbors in advance, they have done so out concern over community attempts to block a facility's opening.

4. Manpower training. The community residential movement requires investment in staff training, particularly for houseparents, personal aides, and other paraprofessionals with respect to such topics as handicap, the normalization principle, and community resources.

Policy Considerations

1. Integration v. segregation. This issue, perhaps the overriding issue, has many ramifications--whether to make all housing accessible and adaptable or design special facilities for the handicapped, whether to emphasize multi-unit or single-unit housing, whether to mix the handicapped and elderly, and where to locate special programs in the community.

2. Generic v. categorical programs. Related to the integration segregation issue is the question of whether generic housing and residential programming is preferable to the current categorical system of funding and administration. HUD is already generic in focus, but most residential programs are designed for specific handicapped groups. Generic community support services are also an alternative to categorical ones.

3. Institutional reform v. community programming. The available research indicates that institutions are not all bad, and that inferior programs can exist in both large and small facilities. The question which has not been adequately addressed

by policy makers is the question of the future role of instutions. If community residential programming means dilution of support to institutions which continue to serve the handicapped, those persons will not be well served.

4. Supportive services v. community residential programming. If many handicapped persons would not need special residential settings if they had supportive services and environmental modifications in their own homes, this option should be explored. Not only would it be fully consistent with the principle of normalization, but it would save costs.

5. Public v. private funding and administration. There is a need for further study of the relative costs and benefits of private and public housing and residential programming alternatives, as well as profit v. nonprofit alternatives. The basic question is who should be doing what.

It is critical, if a coherent national plan to meet the housing and residential programming needs of the handicapped is to be set in place, that consumers, professionals, policy makers, and the public deliberate these kinds of issues.

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